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WENTWORTH'S

PRIMARY ARITHMETIC.

BY

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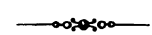

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NOTE TO TEACHERS.

TEACHERS will find the authors' First Steps in Number, First Part of Teachers' Edition, of great help in beginning number-work with children; but this book should be put in the hands of children as soon as they can follow intelligently the reading of the questions by the teacher. The pupil's attention must be directed solely to giving quick and accurate answers to the questions, and his mind must never be diverted from the number-work of the lesson by difficulties in reading. It is expected, therefore, that the teacher will read for the pupil, until the pupil can read for himself without difficulty. It is expected, also, that the teacher will illustrate with representative marks or dots every problem that the pupil finds to be hard, and in this way lead him to the correct result.

The Pupils' Edition of First Steps in Number will furnish abundant supplementary slate-work for children at the different stages of their progress in the art of dealing with small numbers.

PRIMARY ARITHMETIC.

CHAPTER I.

NUMBERS FROM ONE TO TEN.

Lesson 1.

THE NUMBERS ONE, TWO, THREE.

How many boys are on the fence? How many are on the ground?

Two boys and *one* boy are *three* boys.

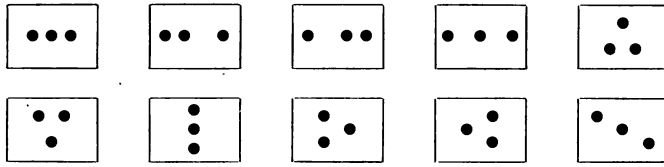
How many boys do you see in the picture?

How many dogs do you see in the picture?

How many hats do you see?

How many houses do you see?

Lesson 2.



How many dots are in each group above?

Find a group of *two* dots and *one* dot; of *one* dot and *two* dots; of *three single* dots.

Put your finger over *one* dot. How many more dots do you now see in the group? Put your finger over *two* dots. How many more dots do you now see in the group? Put your finger over *three* dots. Are there any more dots in the group?

Take two pencils; now take another pencil; how many pencils have you?

Two fingers and one finger make how many fingers?

Annie saw a dog on one side of the street this morning, and two more dogs on the other side of the street; how many dogs did she see?

On a twig is one white blossom and two pink blossoms; how many blossoms are on the twig?

If a cat catches two mice one day and one mouse another day, how many mice does she catch in all?

Two marbles and a kite are how many things?

Two kittens and a dog are how many animals?

A block, a spool, and a top are how many things?

Lesson 3.

Here are *two* squirrels on the tree, and *one* squirrel on the ground; how many squirrels in all?

If the squirrel that is on the ground should run into his nest, how many squirrels could you see?

If the *two* squirrels in the tree should hide behind the tree, how many squirrels could you see?

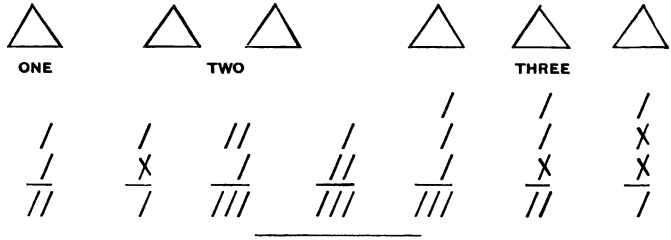
Two kittens in a basket and *one* kitten on a chair are how many kittens?

If *one* of these kittens should run away, how many would remain? If *two* kittens should run away, how many would remain?

If *two* rabbits are nibbling a carrot, and *another* rabbit is coming to nibble with them, how many rabbits are there in all?

Lesson 4.

SLATE WORK.



Read: △ △ and △ are △ △ △.

□ and □ □ are □ □ □.

and are .

○ and ○ and ○ are ○ ○ ○.

  and are   .

REVIEW EXERCISE.

If I have three cows, and sell one cow, how many cows shall I have left?

There were three blossoms on this twig, but two have fallen off. How many are left?

Tom had three oranges, but he gave an orange to each of his two little brothers. How many oranges had he then?

If you have three spoons, and put each one in a cup by itself, how many cups will have a spoon?

If you have a knife, a fork, and a spoon, how many things have you? If you lose the knife, how many things will you have left?

Lesson 5.

THE NUMBER FOUR.

How many boys do you see in the picture?

How many girls do you see?

Three boys and *one* girl are *four* children.

How many birds can you find in the picture?

Name *four* different things that you can see in the picture.

Make four marks on the board; cross out one mark. How many are not crossed out?

Cross out two marks. How many are not crossed out?

Cross out three marks. How many are not crossed out?

Lesson 6.

How many balls are and ?

How many tops are and ?

How many hats are and ?

There were four bottles on a shelf, but one rolled off. Draw a picture for this story, and tell how many bottles were left on the shelf.

There were four mice in a nest, but one ran out. Draw a picture for this story, and tell how many were left in the nest.

How many apples are and ?

How many eggs are O O and O O?

I have cents. How many 's can I buy at two cents each?

A man had . How many pairs of shoes had he?

I found two hens' nests with two eggs in each nest. How many eggs did I find?

I have two baskets, with two handles on each basket. How many handles are on both baskets?

How many □'s can you form with ////?

How many △'s can you form with ////?

NOTE. The marks //// should be read "sticks," when used as sides of triangles, squares, etc.

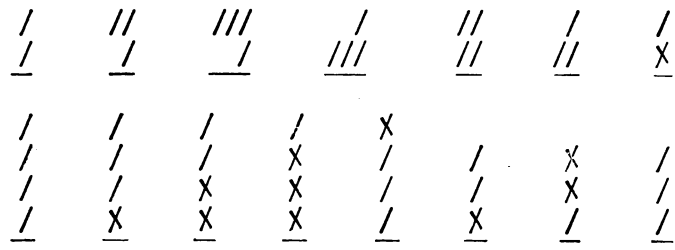
Charlie gets a cent for every paper he sells. How many cents will he get for four papers?

John had four cents. He bought apples at one cent each. Draw a picture to show how many apples he bought.

Lesson 7.

SLATE WORK.

Copy, and find how many :



Fill out the blanks :

Three and are —.

One and are —.

Two and are —.

From take away *one* broom. How many are left ?

From take away *two* umbrellas. How many are left ?

Take away *three* umbrellas. How many are left ?

From take away , and how many will be left ?

Take away , and how many will be left ?

Take away , and how many will be left ?

Lesson 8.

Dates, figs, raisins, and prunes; how many kinds of fruit?

A cat, two kittens, and a mouse are how many animals? The mouse runs away; how many animals are left? The cat runs after the mouse; how many are left? One kitten runs off; how many then remain?

If there are four kittens, two on a mat, how many mats are there?

I see four blinds, two on each window; how many windows are there?

I have four apples, two on a plate; how many plates are there?

I have four cents; how many apples can I buy at two cents apiece?

I have four sticks of candy, and I give them to two children, giving the same number to each child; how many sticks does each child receive?

How many boots does it take to make a pair of boots? how many mittens to make a pair of mittens?

How many pairs of mittens does it take for one boy? how many mittens?

How many pairs of boots does it take for one boy? how many boots?

How many pairs of boots does it take for Harry and Ned? how many pairs of stockings?

Lesson 9.

THE NUMBER FIVE.

How many boys do you see in the boat? How many girls do you see?

Four boys and *one* girl are *five* children.

How many of the five are rowing? How many are not rowing?

Two children and three children are how many?

Two boys and two boys and one girl are how many children?

How many pond lilies do you see in the picture?

If you pick one lily, how many will remain?

If you pick four lilies, how many will remain?

If you pick two lilies, how many will be left?

If you pick three lilies, how many will be left?

Lesson 10.

How many cups are and ?

How many ladders are and ?

How many tops are and ?

How many circles are ○ ○ and ○ ○ ○?

How many triangles are △ and △ △ △ △?

How many corners has this pentagon ⬠?

There were five nests with an egg in each nest. How many eggs were there in all?

I have cents. How many cakes at one cent each can I buy?

A pansy blossom has five petals; two of them are black, and the rest bright. How many petals are bright? Show by a drawing.

A man had five horses; two were used in a span. How many besides the span did he have?

There were five peas in a pod. When the pod was opened, one flew up in the air and one fell on the floor; the rest went into the pan. Make a picture for this story, and show how many peas went into the pan.

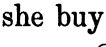
Five little girls were running in a line. One got snapped off, and another fell down. How many were left in the line? Show by a drawing.

Five boys were playing fox and geese. One boy was the fox, and one goose got caught before he could hide. How many geese remained to be caught?

Lesson 11.

Mary has cents. How many oranges at two cents each can she buy? How many cents will she have left?

Nellie has cents. How many oranges can she buy?

How many more 's at a cent each can you buy for cents than for  cents?

Annie earned a cent each day that she swept the steps. If she earned five cents one week and only one cent the next week, how many more times did she sweep the steps one week than the other?

How many plums are and ?

How many chairs are and ?

Give a story for , two of which were eaten, and tell how many remained.

Give a story for , three of which were used for cake, and tell how many were left.

Give a story for , four of which were eaten, and tell how many remained.

If I buy a two-cent postage stamp, and give a five-cent piece in payment, how much change ought I to receive?

If a pail holds five pints, and there are three pints of milk in it, how many more pints will it hold?

Here are five marks on the board, which you may call boys. If two of the boys go into the post-office, and the rest walk along together, how many walk along together?

Lesson 12.

Five children were playing "Snap the whip"; two were snapped off. How many were left?

Three boys and two girls were playing in the yard. Two boys and one girl ran out into the street to play. How many children were left in the yard?

Harry, Frank, and John went nutting with Annie and Nellie. Harry and Nellie picked chestnuts; the rest picked hazelnuts. How many picked hazelnuts?

If each picked a quart of nuts, how many quarts of nuts did they pick in all?

If they had two baskets, and three quarts of nuts in one basket, how many quarts did they have in the other basket?

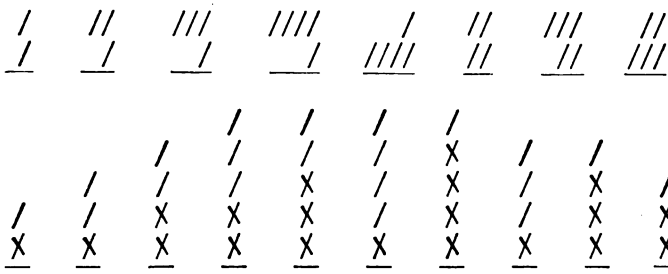
If they spilled two quarts in jumping over a fence, how many quarts had they left?

George had five apples, and gave two of them to John. How many apples had he left?

Lesson 13.

SLATE WORK.

Copy, and find how many :



and are how many ladders ?

 and are how many chairs ?

and are how many blocks ?

and are how many ?

and are how many ?

From * * * * * take away two stars. How many are left ?

From take away three tops. How many are left ?

From take away four pencils. How many are left ?

How many □'s can you make with /////?

How many △'s can you make with /////?

How many ⬠'s can you make with /////?

Lesson 14.

If your mamma, Harry and John, you and I, have each a five-cent piece, how many five-cent pieces do we have in all?

Five children have each a cent. How many boxes at five cents a box can they buy?

Five children were going home from school together. One stopped at a store, one at the post-office, and two followed the hand-organ. How many went home?

Five boots stood in a corner. One was an odd boot. How many pairs of boots were there?

What five pieces of money make five cents?

What three pieces of money make five cents?

What four pieces of money make five cents?

What one piece of money makes five cents?

What two pieces of money make five cents?

Five dogs were playing in the street, but two of them ran into a field. How many dogs were left in the street?

Five kittens were playing in a room, but three of them ran out of the room. How many were left in the room then?

If James earns a cent a day, in how many days will he earn five cents?

Harry has a five-cent piece, and Tom has a one-cent piece. How much more money has Harry than Tom?

Lesson 15.

THE NUMBER SIX.

How many dogs besides the old mother dog can you see in the picture?

Five dogs and *one* dog are *six* dogs.

How many dogs in all do you see in the picture?

How many dogs are playing?

How many dogs are looking on?

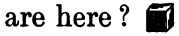
Four dogs and *two* dogs are how many dogs?

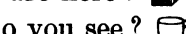
If one more dog should play with the others, how many dogs would be playing? How many would be looking on?

Three dogs and three dogs are how many dogs?

How many marks do you see on the barrel?

Lesson 16.

How many blocks are here? 

How many cups do you see? 

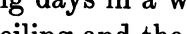
How many stars are in this group? ******

How many working days in a week?

If you count the ceiling and the floor, how many sides has this room?

Give six words that you can spell.

Name six animals that you know.

How many pears are  and ?

How many days are five days and one day?

If your papa has a holiday this week, how many days will he work?

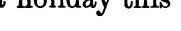
If the top and bottom of a box are red, and the other faces black, how many faces are black?

If only the side faces of a box are papered, how many faces are not papered?

How many sides have ?

Here are a half-dozen eggs ○ ○ ○ ○ ○ ○. If I use three of them for cake, how many eggs shall I have left?

How many stars are ***** and *?

Give a story for  and .

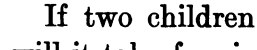
There were . If were eaten, how many pears were left?

There were six little mice in a basket, but four jumped out. Make a drawing for this story to show how many remained in the basket.

Lesson 17.

Six boys playing soldiers marched by twos. How many lines did they form?

If two children sit at a desk, how many desks will it take for six children?

For  cents how many two-cent stamps can you buy?

Here are six straight lines // // //; call them gloves. How many pairs of gloves are there?

Call them horses. How many pairs of horses?

Call them oxen. How many yokes of oxen?

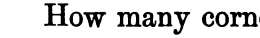
If you have six cents in two-cent pieces, how many two-cent pieces have you?

How many mittens in three pairs of mittens?

How many horses in three spans of horses?

How many oxen in three yokes of oxen?

How many △'s can you form with //////?

How many three-cent cakes can you buy for  cents?

How many corners have ?

How many cents are two three-cent pieces?

Lesson 18.

THE HALF.

Into how many parts is this apple divided?

Each piece is *one-half* of the whole apple.

Divide this circle ◯ into two parts of the same size.

Divide this ring ◯ into two equal parts.

Into how many equal parts is this square

divided? What is each part called?

Into how many equal parts is this line one-half | one-half divided? What is each part called?

What part of the ◯ is this ◖ ?

What part of the ▯ is this ▯ ?

Divide this ▯ into halves in all the ways you can.

Divide this ——— into halves.

How many halves of an apple does it take to make a whole apple?

How many halves of an orange make a whole orange?

Lesson 19.

If you have one-half of an apple, and I have one-half of the apple, how much do we both have?

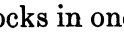
If I have a dollar and spend half of it, how much money shall I have left?

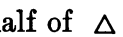
If there is half of a banana on each of two plates, how much is there on both plates?

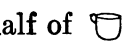
If you drink a half-pint of milk at each meal, for how many meals will a pint last?

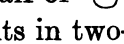
Divide these into two groups with the same number in each group. How many blocks are in each group?

Divide these into two groups with the same number in each group. How many blocks are in each group?

How many blocks in one-half of  ? of ?

What is one-half of  ?

What is one-half of  ?

What is one-half of  ?

I have six cents in two-cent pieces. How many two-cent pieces have I?

Mary has two three-cent pieces. How much money has she?

If there are three nests with ○ ○ in each nest, how many eggs are in the three nests?

If there are two nests with ○ ○ ○ in each nest, how many eggs are in the two nests?

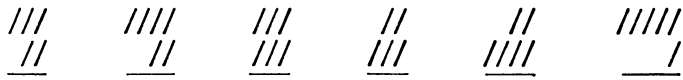
Lesson 20.

Copy: SLATE WORK.

□□□ THREE □□□□ FOUR □□□□□ FIVE □□□□□□ SIX

Copy and add enough dots to make six in each card below:

Copy and find how many:



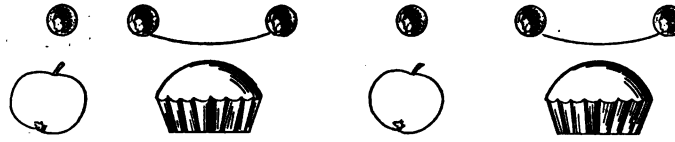
Copy and fill out the blanks:

One-half of 🍐 🍐 🍐 🍐 🍐 🍐 is —.
One-half of △ △ is —.
One-half of □ □ □ □ is —.
🧊 🧊 are one-half of —.
🧊 is one-half of —.
🧊 🧊 🧊 are one-half of —.
○ ○ ○ and — are ○ ○ ○ ○ ○.
✱ ✱ ✱ ✱ and — are ✱ ✱ ✱ ✱ ✱ ✱.
⊙ ⊙ ⊙ ⊙ ⊙ and — are ⊙ ⊙ ⊙ ⊙ ⊙ ⊙.
▭ ▭ and — are ▭ ▭ ▭ ▭.
△ △ △ and — are △ △ △ △ △.
🌀 🌀 🌀 and — are 🌀 🌀 🌀 🌀 🌀 🌀.
🏠 and — are 🏠 🏠 🏠 🏠 🏠 🏠.
🫖 and — are 🫖 🫖 🫖.

Lesson 21.

If you can buy apples at two for three cents, how many apples can you buy for six cents?

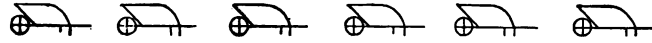
If a cake costs two cents, and an apple one cent, how many cakes and apples can you buy for six cents?



A pint of milk costs two cents; how many pints of milk will six cents buy?

Harry's boots cost four dollars, and John's boots cost two dollars. How much did both pairs cost?

If one wheelbarrow has one wheel, how many wheels have six wheelbarrows?



Lesson 22.

THE NUMBER SEVEN.

How many white swans can you see in the picture?

How many black swans do you see?

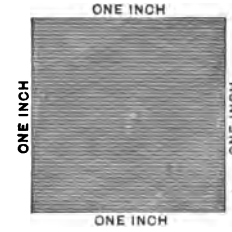
Six swans and *one* swan are *seven* swans.

If one of these seven swans should sail out of sight, how many could you see?

If six swans should sail out of sight, how many could you see?

Name each two numbers that make seven, by looking at the number of swans in the picture.

Name each number that you can take out of seven, and tell what will remain.



Lesson 23.

THE INCH.

Draw a line as long as this ————————.

This line ———————— *is an inch long.*

Draw a slanting line that is an inch long.

Measure an edge of your number-blocks and tell how long it is.

What part of an inch is this ———— ?

How long is one-half of the line below ?

———————————————

How long is one-half of this ———————— ?

How long is the side of the square at the top of this page ?

A square that is an inch on a side is called a square inch.

How many square inches are in all of the faces of a cube that is an inch on each edge ?

How many square inches in a surface that is one inch wide and three inches long ?

How many square inches in a surface that is two inches wide and three inches long ? (Show with squares.)

Lesson 24.

THE NUMBER SEVEN.

How many geese are in the picture?

See how many geese are in front of the little girl, and how many are behind her, and tell what two numbers make seven.

If two geese fly away, how many will be left?

If a big boy drives away five of the geese, how many would the little girl have to drive away?

In the picture three geese have their mouths open. How many have their mouths shut?

If four of these geese are brown, and the rest white, how many are white?

Four geese and how many make seven geese?

Three geese and how many make seven geese?

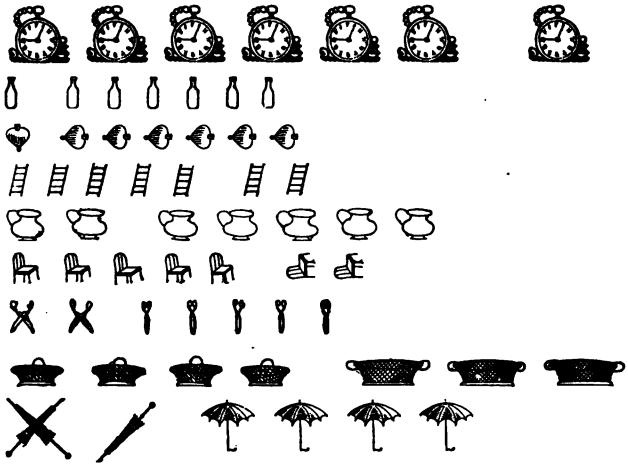
If a fox comes around and catches a goose every night, in how many nights will he catch all of them?

If each of these geese found a frog, how many frogs would all of them find?

Lesson 25.

DRILL UPON FACTS IN SEVEN.

Give a story for:



Show with the blocks the following stories:

If I have seven hens, and sell five, I shall have two hens.

Mary has four dolls, and Annie three dolls; they have together seven dolls.

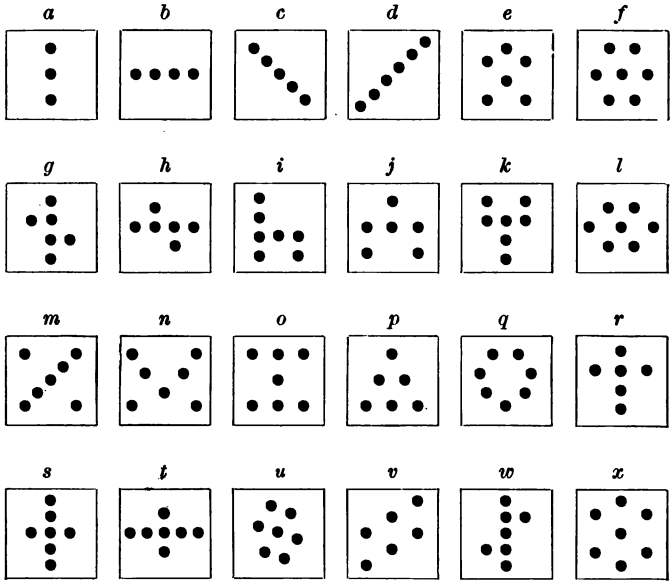
With seven cents I can buy three apples, at two cents each, and have one cent left.

With seven cents I can buy two three-cent stamps, and have one cent left.

If I owe you seven cents, and pay you in three pieces of money, I can give you a three-cent piece and two two-cent pieces.

Lesson 26.

REVIEW EXERCISE.



Name quickly the number of dots in *b*; in *g*; in *c*; in *e*; in *h*; in *j*; in *f*; in *k*; in *o*; in *s*; in *u*.

Find each card that has seven dots on it.

Name each two numbers that make seven.

What three equal numbers and one make seven?

Name each two numbers that make six.

Name each two numbers that make five.

Name each two numbers that make four.

Lesson 27.

SLATE WORK.

Copy, and find how many:

Copy, and add enough dots to make each card a picture of seven:

Copy and complete:

Three and one are —.
Two and three are —.
Four and two are —.
Five and two are —.
Four and three are —.
Three and four are —.
Three twos are —.
Two twos are —.

There are two threes in —.
There are three twos in —.
Two twos and one are —.
Three twos and one are —.

If four is taken from six, how many will be left?
If five is taken from seven, how many will be left?
If four is taken from seven, how many will be left?
If three is taken from five, how many will be left?
If two is taken from seven, how many will be left?
If three is taken from seven, how many will be left?

Lesson 28.

Illustrate these stories, and write the answers:

Of seven pocket knives which I saw, three only had blades open; how many had the blades shut?

Of seven apples which were on the table, five had no stems; how many had stems?

Five tops were spinning, but two have fallen over; how many tops are spinning?

Four cups are right side up on the table, and three are up side down; how many cups are on the table?

If a six-quart pail is half full, how many quarts are in the pail?

If a four-pint pail is half full, how many pints are in the pail?

If a pint of nuts costs three cents, how many cents will two pints cost?

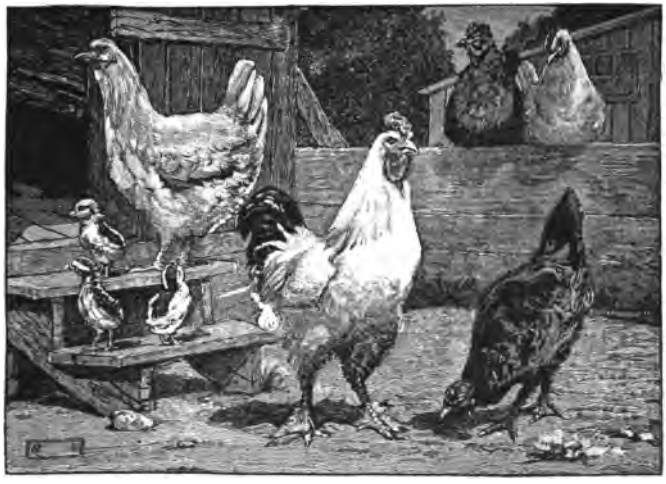
If a peach costs one cent, how many cents will seven peaches cost?

If an orange costs two cents, how many cents will three oranges cost?

If you have seven boxes of which four are red and the rest white, how many are white?

If you have five blocks in one group, and two blocks in another group, how many blocks have you in both groups?

At two cents each, how many pears can you buy for six cents?



Lesson 29.

THE NUMBER EIGHT.

How many hens and chickens are there in the picture, not counting the big rooster?

Counting the rooster, there are *eight* in all?

How many little chickens do you see?

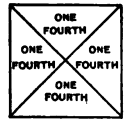
How many old hens do you see?

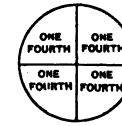
Four hens, a rooster, and three chickens are how many fowls?

If one little chicken should hide under the stairs, how many fowls could you see?

If seven fowls should fly over the fence, how many could you see?

If two hens should go to their nests, how many fowls would be left?





Lesson 30.

ONE-FOURTH.

Tell how the apple is divided.

Tell how the square is divided.

Tell how the circle is divided.

When anything is divided into *four equal parts*, each part is called *one-fourth* of the whole.

Find one-fourth of this ◯.

Find one-fourth of this □.

Find one-fourth of this ▭.

Find one-fourth of △ △ △ △.

One △ is what part of △ △ △ △ ?

Find one-fourth of 🍓 🍓 🍓 🍓 🍓 🍓 🍓 🍓.

🍓 🍓 are what part of 🍓 🍓 🍓 🍓 🍓 🍓 🍓 🍓 ?

Find one-fourth of 🧱 🧱 🧱 🧱.

Find one-fourth of 🧱 🧱 🧱 🧱 🧱 🧱 🧱 🧱.

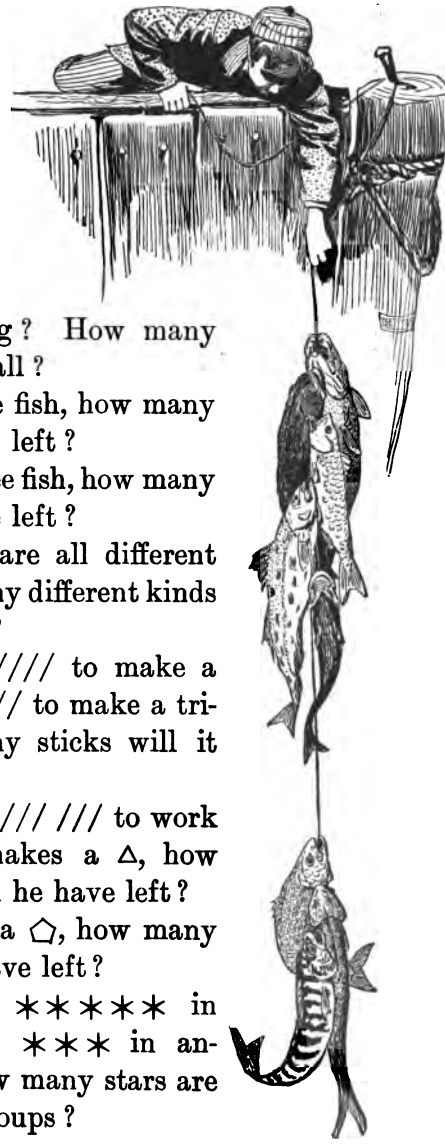
A boy has eight pears. If he sells one-fourth of them, how many will he sell ?

John had eight miles to walk. After he had walked two miles, what part of the distance had he gone ?

Eight cents will buy how many two-cent pencils ?

If you make eight pen-wipers, and make only two of a kind, how many kinds will you make ?

Lesson 31.



Dan has two strings of fish. How many are on the upper string? How many are on the lower string? How many fish has he in all?

If he sells five fish, how many fish will he have left?

If he sells three fish, how many fish will he have left?

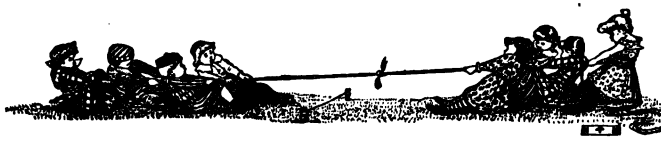
If these fish are all different in kind, how many different kinds of fish has Dan?

If it takes ///// to make a pentagon, and /// to make a triangle, how many sticks will it take for both?

Willie has ///// /// to work with. If he makes a △, how many sticks will he have left?

If he makes a ⬠, how many sticks will he have left?

If there are ✶✶✶✶✶ in one group, and ✶✶✶ in another group, how many stars are there in both groups?



Lesson 32.

Four boys and four girls are pulling rope. How many children are pulling rope?

If the rope is four feet long on the girls' side, and four feet long on the boys' side, how long is the rope?

Play that two of the boys and two girls got tired playing. How many became tired? How many were there to pull the rope then?

In going home, these eight children marched four in a line. How many lines did they form?

In going home they found enough apples so that there was an apple for each four of the children. Can you tell how many apples they found?

If they saw two birds' nests, with four eggs in each nest, how many eggs were in both nests?

If half of these children live at one house, and half at another, how many live at each house?

Annie found two four-leafed clovers. How many leaves did they both have?

Give a story for eight boxes in a pile, and tell how many were left in the pile if four fell off.

There were eight buttons on a card. If half of them were used, how many were used?

Lesson 33.

SLATE WORK.

Copy and tell how many:

/// // //// /// ////// // ////
//// ///// // ///// // /// ////

Copy, and add enough dots so that each card will be a picture of eight:

Show as many separate ⌊_'s as you can with // // // //.

Show as many separate △'s as you can with /// /// //.

Show as many separate □'s as you can with //// ////.

How many separate ⬠'s can you show with ///// ///?

How many can you make from eight squares of paper?

How many □'s and △'s can you show with //// /// /?

How many sides have ▱ ▱? have △ △?

How many inch squares will it take to cover the top of a box that is four inches long and two inches wide?

Lesson 34.

REVIEW EXERCISE.

Draw eight lines, and have half of them straight up and down, and the other half straight right and left. How many are in each group?

There are eight gills in a quart. How many gills are in one-half of a quart?

Arrange eight dots on the board in rows so that one-fourth of the dots will be in each row.

In a diagram there were eight △'s. How many △'s were in one-fourth of the diagram?

If you divide an orange equally among four boys, what part of the orange do you give each boy?

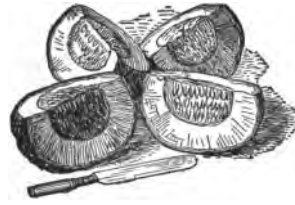
If you divide a pie into two pieces, so that one piece will be three times as large as the other, what part of the pie will each piece be?

If a boy earns two cents a day for Tuesday and Friday, and one cent for each of the other days in the week, how many cents will he earn a week?

Alice bought a pencil for one cent, a book for one cent, six sheets of paper for one cent, a rubber for two cents, and a sponge for two cents, and had one cent left. How many cents had she at first?

Four two-horse sleds will require how many more horses than five single-horse sleds?

Two dogs have how many more legs than one dog?



Lesson 35.

DRILL UPON ONE-FOURTH.

If you have a melon, and eat one-fourth of it for dinner, how much of the melon will be left?

If you eat three-fourths of the melon, what part of the melon will be left?

If we eat three-fourths of a pie for dinner, and one-fourth of it for supper, what part of the pie shall we eat?

If you eat one-fourth of a melon each day, how many days will the melon last?

If four little boys have each one-fourth of an apple, what part of an apple have they in all?

How many days will three-fourths of a pound of sugar last, if one-fourth of a pound is eaten each day?

If it takes one-fourth of a yard of braid to bind the sleeve of a jacket, how much will it take for three sleeves? for two sleeves? for four sleeves?

I have a mile to go. After I have gone one-fourth of a mile, what part of a mile remains for me to go?

ONE-HALF.

TWO-FOURTHS.

Lesson 36.

Which is more, one-half or two-fourths?

If I have half of an orange, and I give you one-fourth of an orange, what part of the orange shall I have left?

If there is one-half of a quart of milk in one pitcher, and one-fourth of a quart in another pitcher, how much milk is there in both pitchers?

If you drink one-fourth of a quart of milk for breakfast, and one-fourth of a quart for supper, how much milk will you drink?

If I buy three-fourths of a pound of butter, and use one-half of a pound, what part of a pound will be left?

Ida picked three-fourths of a bushel of berries. She kept one-fourth of a bushel, and sold the rest. What part of a bushel did she sell?

I have one-half of a bushel of nuts. How many boxes shall I need, if I put one-fourth of a bushel into each box?

There were two plates on the table, with one-fourth of a pound of dates on each plate. What part of a pound was on both plates?

Lesson 37.

THE NUMBER NINE.

I can see five melons on the box, and three in the box. How many melons does that make?

Sam has another melon. How many melons are there in all?

If I buy one melon, how many will Sam have?

If I buy eight melons, how many will he have?

Play that one melon rolls out of the box. How many will be in the box? How many out of the box? How many in all?

If only two of these melons are ripe, how many must stay and ripen?

If seven of the melons have black seeds, and the rest white seeds, how many have white seeds?

Lesson 38.

How many cats can you see climbing up the tree?

How many are on the branch of the tree?

How many cats are there in all?

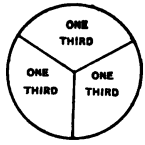
If the two gray cats that are in the tree, and the black cat, go off to find their dinner, how many will stay?

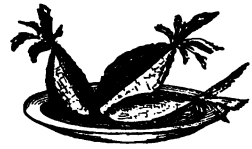
If the four black-and-white cats and the two white ones are house cats, and the rest live in a barn, how many live in the barn?

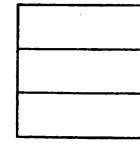
If these nine cats should sleep three in each box, how many boxes would they need?

I saw three saucers of milk, and three cats drinking from each saucer. How many cats did I see?

With /////// how many △'s can you form?







Lesson 39.

ONE-THIRD.

Into how many parts is this pine-apple divided?

Tell how the circle is divided.

Tell how the square is divided.

When anything is divided into *three equal parts*, each part is called *one-third* of the whole.

Find one-third of this △.

Find one-third of this ▭.

Find one-third of this ○.

Divide these △ △ △ △ △ △ △ △ △ into three equal groups.

Find one-third of these □ □ □ □ □ □.

Find one-third of these ○ ○ ○.

Find one-third of these □ □ □ □ □ □ □ □ □.

I had a gallon of molasses, but I used two-thirds of it. What part of a gallon had I left?

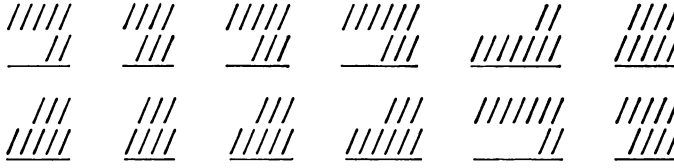
Mamma gave Annie one-third of a yard of edging for her doll's dress, and gave Nellie one-third of a yard. What part of a yard did she give both?

Harry picked up chips. If his basket was two-thirds full, and he filled another third of the basket, how full was the basket then?

Lesson 40.

SLATE WORK.

Copy, and tell how many:



Copy, and make each a picture of nine:

Give a story for:

Seven mice and two mice.

Nine robins, seven of which flew away.

Five elephants and four elephants.

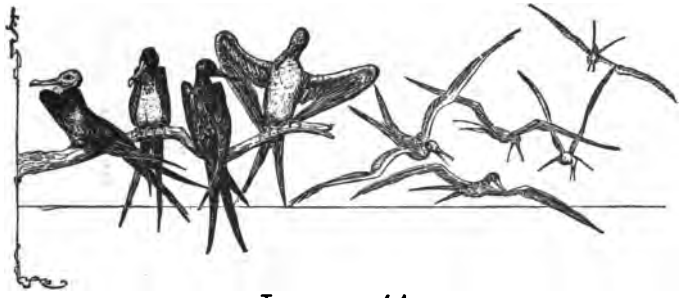
Nine crows, four of which were in a tree.

With //// //// / how many separate squares can you make, and how many sticks will remain?

With /// /// /// how many separate triangles can you make?

If you have nine cents, how many two-cent stamps can you buy, and how many cents will you have left?

If you have nine square inches of paper, how many will remain after covering a box lid that is four inches long and two inches wide?



Lesson 41.

How many birds are flying? How many are on the tree? How many birds are there in all?

Tell a story about five cats that lived in a barn, and four that lived in a house, and tell how many cats there were in all.

Tell a story about five hens that were on the roost, and four that were on the ground, and tell how many there were in all.

Play that five of these birds fly away. How many will be left?

Tell a story about nine butterflies in a glass, and tell how many will be left if five get away.

Tell a story about nine worms, five of which made cocoons for themselves, and tell how many worms you could then see.

How many sides have a pentagon and a square?

How much money have I, if I have a five-cent piece and two two-cent pieces?

How much money have you, if you have a three-cent piece, a two-cent piece, and four single cents?

Lesson 42.

Name some things that you have seen measured with a gill measure; with a pint measure; with a quart measure.

Which one of these measures holds the most?

Which one of them holds the least?

A pint will fill four gill cups.

How many gills in a pint of vinegar?

Four gills of syrup are how many pints of syrup?

At one cent a gill, what will a pint of yeast cost?

At four cents a pint, what will a gill of milk cost?

Two gills are what part of a pint?

Which holds more, a pint or a quart measure?

A quart will fill two pint cups.

How many pints in a quart of molasses?

Two pints of oil are how many quarts of oil?

How many pint cans are required for a quart of milk?

One pint is what part of a quart?

If a pint of vinegar costs three cents, what will a quart cost?

At six cents a quart, what will a pint of oil cost?

Copy: Four gills are one pint.
Two pints are one quart.

Lesson 43.

THE NUMBER TEN.

How many ten-pins do you see ?

How many are standing up ?

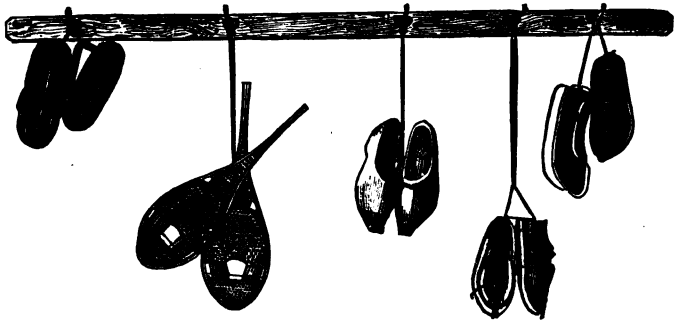
How many have fallen over ?

Ten pins were standing in a bowling-alley, but the first ball threw down two pins. How many pins remained standing ?

If eight pins had been thrown down, how many would have remained standing ?

If you have eight pretty buttons, and get two more, how many buttons will you have ?

I have a two-cent piece and eight single cents. How much money have I ?



Lesson 44.

Count by twos to find how many shoes are here?

How many of each kind do you see?

How many kinds are there?

If your mamma makes ten mittens, how many pairs of mittens does she make?

If it takes two yards of cloth to make a boy's jacket, how many jackets can a man make from ten yards of cloth?

I have ten cents in two-cent pieces. How many two-cent pieces have I?

Five two-cent pieces are how much money?

Five bicycles have how many wheels?

Five trunks have how many handles?

A cylinder ⌭ has two flat faces. How many flat faces will five cylinders have?

Ten sticks will make how many corners?

Ten sticks will form how many triangles?

Ten sticks will form how many squares?

Lesson 45.

Find how many children are marching.

How many are studying?

How many children are there in all?

A week and three days are how many days?

If seven little Japanese children are eating their dinner, and three more are looking on, tell how many little Japs there are in all.

Ten children had a party. Three went home early. How many were left at the party?

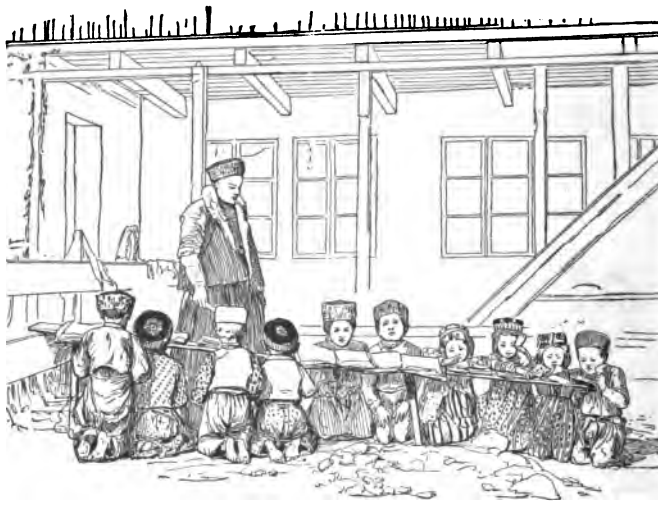
A ten-quart pail has seven quarts of milk in it. How many more quarts will it hold?

Nellie had five two-cent pieces. She bought a book for four cents, and two pencils for three cents. How much money had she left?

Seven from ten leaves how many?

Three from ten leaves how many?

How many fives are there in ten?



Lesson 46.

In this funny school, how many children are kneeling behind the bench? How many are in front of the bench? How many are there in all?

If four are sent home, how many will there be?

If six stand up to make a bow, how many will be left kneeling?

If four take off their caps, how many will have their caps on?

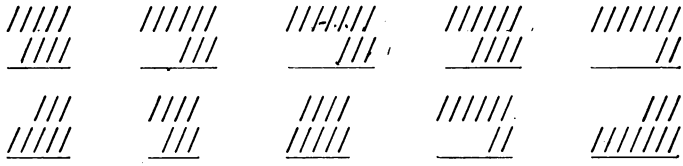
I gave the baker a ten-cent piece for a loaf of bread, and he gave me two two-cent pieces in return. What did the loaf of bread cost?

Two △'s and a square have how many sides together?

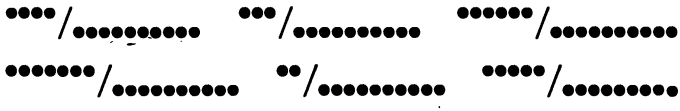
Lesson 47.

SLATE WORK.

Copy, and tell how many:



Copy, and make the same number of dots on one side of the line as on the other side:



Copy, and make each a picture of ten:

With ten sticks, how many squares can you form?

With ten sticks, how many corners can you form?

How many can you lay with ten squares of paper?

What will you have left?

How many square inches of paper will cover the ends of a box, if each end is two inches square?

If the box is five inches long, how many square inches of paper will cover the top? one end?

Lesson 48.

Count these butterflies by twos.

How many are above the stem?

How many are below the stem?

What two equal numbers make ten?

It is five miles to Chestnut Grove. If I go and return, how many miles do I travel?

Nellie is five years old. How old will she be five years from now?

Irene is ten years old. How old was she five years ago?

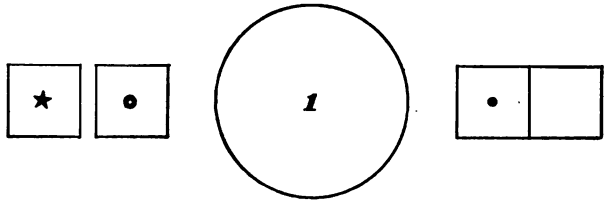
John bought two toy shovels for a cent apiece, and a toy hammer for three cents. He gave a ten-cent piece in payment. How much money ought he to receive in return?

Harry earned ten cents. He then spent five cents. How many cents had he left?

CHAPTER II.

INTRODUCTION OF FIGURES.

Lesson 1.



How many lines bound this circle?

What figure shows how many lines bound a circle?

Illustrate, and write the answers in figures:

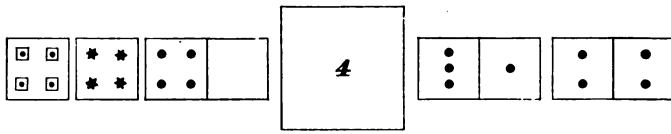
Three bottles were on a shelf. Two bottles fell off. How many bottles were left on the shelf?

A hen had seven chickens. Two were white, four were brown, and the rest were black. How many were black?

John had five pears. He gave two pears to each of two boys. How many pears had he left?

Mary had eight apples. She gave three to each of two girls, and ate one apple herself. How many apples had she left?

Lesson 2.



How many sides has this square?

What figure shows how many sides a □ has?

What figure shows there are *four* stars in the square?

What figure shows how many dots are in each rectangle?

Illustrate, and write the answers in figures:

I bought two two-cent stamps. How much did I pay for them?

A man had eight wheels to sell. He sold half of them. How many did he sell?

How many marbles at five cents each can you buy for six cents? How many cents will you have left?

Willie had six cents. How many cakes at a cent each could he buy, and have two cents left?

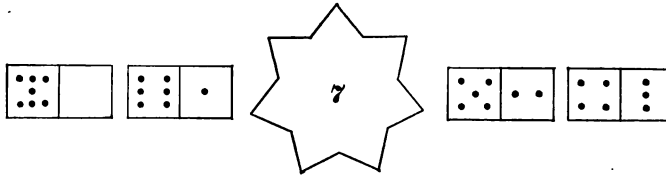
How many pencils at two for a cent can you buy for two cents?

Two pints make a quart. If a quart of milk costs eight cents, what will a pint of milk cost?

How many two-cent stamps can you buy for nine cents, and how many cents will you have left?

How many more sides have △ and □ than a △?

Lesson 3.



How many points has this star?

What figure shows how many points the star has?

Write the figure that shows how many dots are in each rectangle.

Illustrate, and write the answers in figures:

How many separate squares and triangles can you make with ///////?

After making △ △ with seven sticks, how many sticks will you have left?

How many more sides has a □ than a △?

A □ and a △ together have how many sides?

Five cents and two cents are how much money?

If you have seven cents and spend three cents, how many cents will you have left?

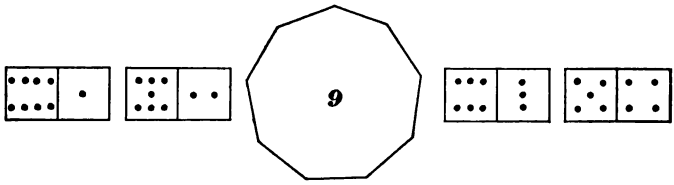
Eddie had /////// to work with. He first made a △. How many sticks had he left?

If you give five cents for a one-cent thimble, how many cents ought you to receive in return?

In seven mittens, how many odd mittens?

Four gills make a pint. If one mug holds a pint of milk, and another mug holds a gill less than a pint, how many gills of milk do both hold?

Lesson 4.



How many sides has this polygon?

Write the figure that shows how many sides this polygon has.

Write the figure that shows how many dots are in each rectangle.

Illustrate, and write the answers in figures:

How many sides have △ △ △?

If you have nine sticks and use five to form a pentagon, how many sticks will you have left?

How many ⌐'s can you make with nine sticks? How many sticks will you have left?

If you have nine sticks and form □ □, how many sticks will you have left?

If you have nine apples, and I have five, how many more have you than I?

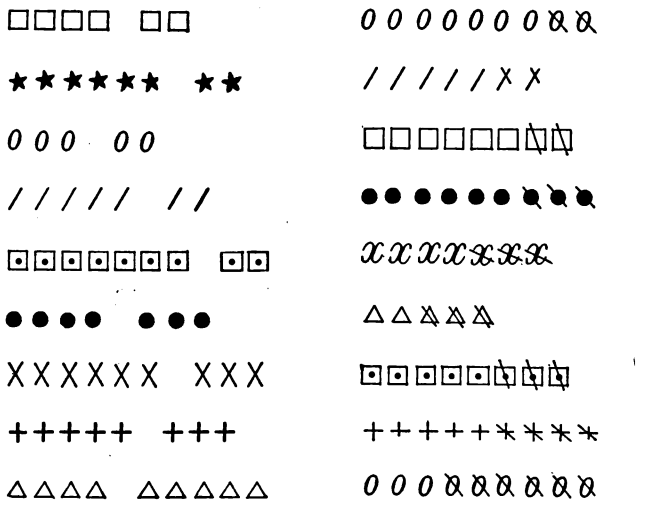
Mary is nine years old, and Annie is two years old. How much older is Mary than Annie?

It took a week and three days to build a wall. How many days did it take to build the wall?

If you have nine sticks, and use four to form a □, how many sticks will you have left?

Lesson 5.

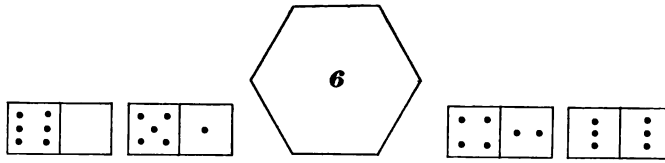
Write in words the facts that are illustrated by the drawings below:



Write the figure that shows *one* is meant.
Write the figure that shows *nine* is meant.
Write the figure that shows *four* is meant.
Write the figure that shows *seven* is meant.
Which of the figures that you have made stands for the greatest number of things?
Which figure stands for the least number of things?
Write the words for which these figures stand:

9 7 1 4 1 7 4 9

Lesson 6.



How many sides has this polygon ?

Write the figure that tells the number of sides.

Write the figure that tells how many dots are in each rectangle.

How many sides have △ △ ?

How many corners have △ △ ?

How many lines must you draw to make ⌂ ?

I have a two-cent piece and enough single cents to make six cents. How many single cents have I ?

If you have ⊞ ⊞ and ⊖ ⊖ ⊖, how much money have you ?

It took three two-cent pieces and a single cent to buy a top. How much did the top cost ?

A square, a square corner, and a triangle will take how many lines ?

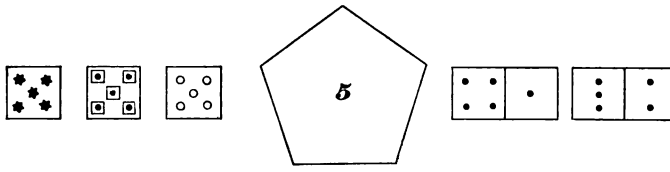
Three cylinders have how many flat faces ?

A cube has how many faces ?

Two squares joined together will take how many lines ?

How many △'s with equal sides can you make about a point ? (Show with sticks of the same length.)

Lesson 7.



How many sides has this pentagon ?

Write the figure that shows how many sides this pentagon has.

Write the figure that shows how many dots are in each rectangle.

Write the figure that shows how many stars are in the square.

Illustrate, and write the answers in figures:

How many corners has this ⬠ ?

How many corners have a ⬠ and a □ ?

How many corners have a square and a triangle ?

How many corners has this ⏢ ?

How many feet is it around a triangle that is three feet on each side ?

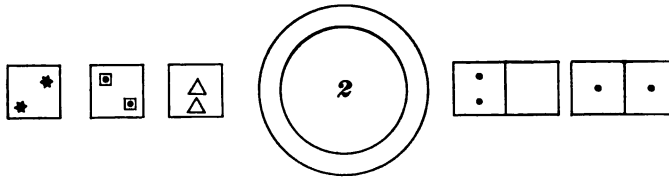
How many walls has a room, counting the ceiling ?

How many square inches of paper will cover the top of a box an inch wide and four inches long ?

How many square inches of paper will cover the top of a box three inches long and two inches wide ?

How many square corners can you make about a point ? (Show with sticks.)

Lesson 8.



How many curved lines has this ring?

Write the figure that shows how many curved lines a ring has.

Copy the drawings at the top of the page, and write the figure *two* under each.

Illustrate, and write the answers in figures:

How many flat faces has a cylinder ⌭?

How many ends has a line?

How many square inches of paper will cover the top of a box five inches long and one inch wide?

How many square inches of paper will cover the end of a box two inches wide and two inches long?

How many square inches can you mark off in a rectangle that is three and a half inches long and two inches wide?

How many square inches are in a square three inches on a side?

Two squares have how many more sides than two triangles?

Three cylinders have how many flat faces?

A square and a triangle have together how many more sides than a pentagon?

Lesson 9.

The word *minus* means made less by. Thus, 5 minus 2 are 3.

Express with figures, and give the answers:

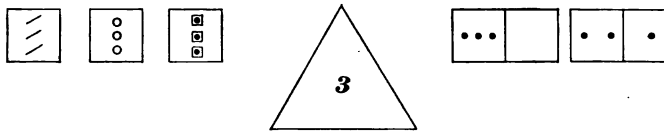
//// and / are? ///// minus four are?
//// and ///// are? ///////// minus four are?
///// and / are? /////// minus one are?
////// and / are? ////// minus five are?
//// and // are? ///////// minus five are?
// and ///// are? /////// minus five are?
/////// and // are? ////// minus two are?
///// and //// are? ///////// minus two are?
///// and // are? /////// minus two are?
// and /// are? ///////// minus six are?
// and // are? ////// minus four are?
// and //// are? /////// minus six are?

Read, and give the answers:

2 and 4 are? 2 and 7 are? 4 and 5 are?
2 and 5 are? 4 and 1 are? 4 and 2 are?
5 and 4 are? 5 and 1 are? 7 and 2 are?
5 and 2 are? 6 and 1 are? 2 and 2 are?

9 minus 2 are? 6 minus 4 are?
9 minus 4 are? 6 minus 2 are?
9 minus 5 are? 6 minus 5 are?
9 minus 7 are? 6 minus 1 are?
7 minus 1 are? 4 minus 2 are?
7 minus 5 are? 2 minus 1 are?

Lesson 10.



How many sides has this triangle ?

Write the figure that tells how many sides a triangle has.

Copy the above drawings, and write the figure *three* under each.

Nine sticks will make how many triangles ?

Six pints of milk are how many quarts of milk ?

Eight pints of milk are how many quarts of milk ?

One pint of cream is how many gills of cream ?

Two pints of yeast and one more gill of yeast are how many gills of yeast ?

If you have three two-cent pieces, what other piece of money will you need to buy a nine-cent loaf of bread ?

What two pieces of money make eight cents ?

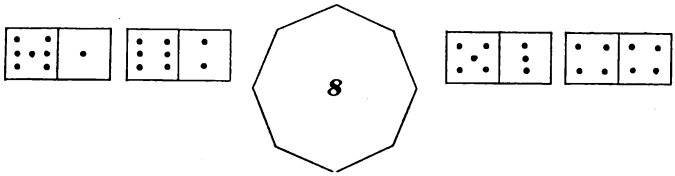
What two pieces of money make five cents ?

What three unequal pieces of money make nine cents ?

If Annie is eight years old, how old was she five years ago ?

When Joe was six years old his father gave him a knife, which he has still. If he is now nine years old, how long has he had the knife ?

Lesson 11.



How many sides has this polygon?

Copy the rectangles, and write the figure *eight* under each.

Write the answers to these questions in figures:

How many gills of yeast make a pint of yeast?

How many gills of yeast are in two pints of yeast?

Four quarts of berries will make how many pies, if it takes one pint of berries for each pie?

How much will a quart of milk cost, at four cents a pint?

What will a quart of yeast cost, at a cent a gill?

Think of the number *eight* and tell at once what number you must put with ///// to make eight; with //////; with ///; with //; with /; with ///////; with ////.

What number minus four is four? minus four is three? minus five is three? minus three is two? minus three is five?

How many square inches are in a rectangle that is four inches long and two inches wide?

What two pieces of money make eight cents?

Lesson 12.

ZERO. 0.

This figure always shows that *none* is meant.

Make the figure on your slate.

How many dots are in each rectangle?

Make all of the figures that you have learned, and write against each figure its name.

Express with figures, and give the answers:

/// and // are? ///// minus three are?
//// and /// are? /////// minus three are?
////// and /// are? //////// minus six are?
///// and /// are? //////// minus three are?
////// and // are? /////// minus four are?
/// and /// are? //////// minus five are?
//// and //// are? //////// minus eight are?
/ and /////// are? //////// minus three are?
/// and ///// are? //////// minus six are?

Read and give the answers:

6 and 3 are?	3 and 6 are?	7 minus 4 are?
6 and 2 are?	2 and 3 are?	8 minus 8 are?
5 and 3 are?	2 and 6 are?	8 minus 3 are?
4 and 3 are?	8 and 0 are?	8 minus 5 are?
4 and 4 are?	3 minus 3 are?	9 minus 6 are?
3 and 0 are?	4 minus 3 are?	9 minus 9 are?
3 and 5 are?	3 minus 0 are?	9 minus 3 are?
3 and 4 are?	6 minus 3 are?	0 minus 0 are?

Lesson 13.

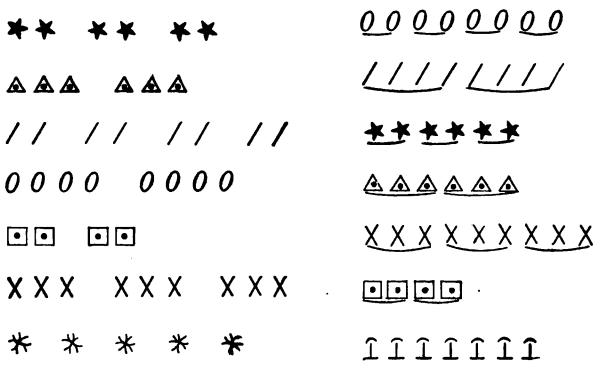
A wood sawyer cuts each stick into three pieces. How many cuts does he make in sawing four sticks of wood? (Make a drawing.)

If peaches are selling at the rate of two for a cent, how many peaches can I buy for four cents? (Show by a drawing.) At the same rate, how much will six peaches cost?

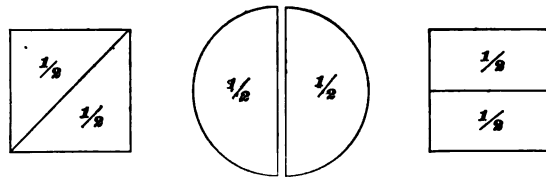
Harry said to Tom, "I have three torpedoes left; how many have you?" Tom answered, "I have twice as many as you, and one more; guess how many I have." How many do you guess Tom had?

How many half-pound weights must be placed in one scale-pan to balance four and a half pounds of shot in the other scale-pan?

Write in words the facts that are illustrated:



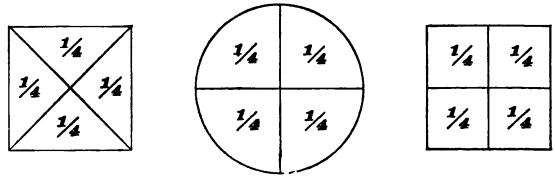
Lesson 14.



Into what is the circle divided?
Into what are the squares divided?
One-half of //////// is? One-half of ///// is?
One-half of ////// is? One-half of /// is?
Copy, and write the answers.

½ of 2 is?	½ of 8 is?	4 is ½ of?
½ of 4 is?	½ of 1 is?	3 is ½ of?
½ of 6 is?	1 is ½ of?	2 is ½ of?

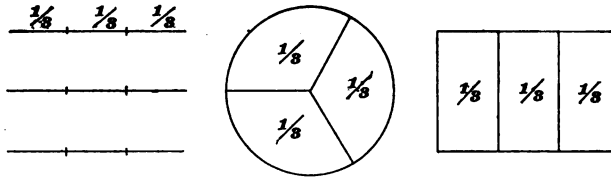
Lesson 15.



Into what is the circle divided?
Into what are the squares divided?
Copy, and write the answers:

¼ of 8 is?	¼ of 4 is?	¼ of 2 is?
2 is ¼ of?	1 is ¼ of?	½ is ¼ of?

Lesson 16.



Into what is the circle divided?

Into what is the rectangle divided?

Express one-third with figures.

Copy the drawings at the top of the page.

What part of ○ is ▱? is ◖? is ◿?

Find one-third of ▭.

Find one-third of ▭▭▭▭.

Find one-third of //////.

Find one-third of ///.

Find one-third of /////////.

One is what part of three?

Two is what part of six?

Three is what part of nine?

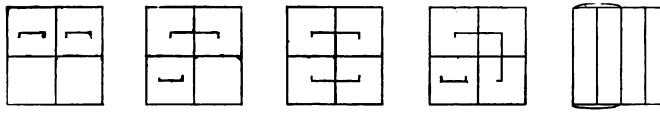
If a △ with equal sides is six inches round the outside, how long is one side of the triangle?

If a cup of cream costs six cents, what will one-third of a cup cost?

If three oranges cost nine cents, what does one orange cost?

A hen had six chickens. Two were white, and the rest black. The white chickens were what part of the whole number of chickens?

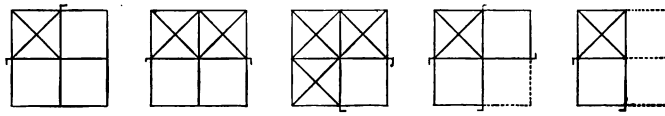
Lesson 17.



Find the answers by the squares:

How much is $\frac{1}{4}$ and $\frac{1}{4}$?
How much is $\frac{2}{4}$ and $\frac{1}{2}$?
How much is $\frac{2}{4}$ and $\frac{2}{4}$?
How much is $\frac{3}{4}$ and $\frac{1}{4}$?

In $\frac{4}{4}$ are how many $\frac{1}{2}$?
How much is $\frac{1}{2}$ and $\frac{1}{4}$?
How much is $\frac{3}{4}$ and $\frac{1}{2}$?
In $\frac{1}{2}$ are how many $\frac{1}{4}$?



How much is 1 minus $\frac{1}{4}$?
How much is 1 minus $\frac{2}{4}$?
How much is 1 minus $\frac{3}{4}$?
How much is $\frac{3}{4}$ minus $\frac{1}{4}$?

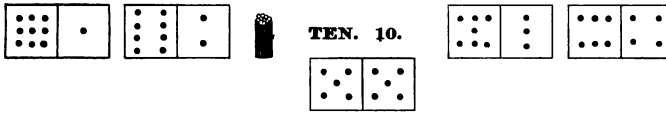
How much is $\frac{1}{2}$ minus $\frac{1}{4}$?
How much is $\frac{1}{2}$ minus $\frac{2}{4}$?
How much is $\frac{3}{4}$ minus $\frac{1}{2}$?
How much is $\frac{2}{4}$ minus $\frac{1}{4}$?

Fill out the blanks:

$\frac{1}{2}$ of 4 is —
$\frac{1}{2}$ of 8 is —
$\frac{1}{2}$ of 6 is —
$\frac{1}{2}$ of 2 is —
$\frac{1}{4}$ of 8 is —
$\frac{1}{4}$ of 4 is —
$\frac{1}{3}$ of 9 is —
$\frac{1}{3}$ of 3 is —
$\frac{1}{3}$ of 6 is —

$\frac{1}{2}$ of 1 quart is — pint.
$\frac{1}{2}$ of 1 quart is — gills.
$\frac{1}{4}$ of 1 quart is — gills.
$\frac{1}{2}$ of 1 pint is — gills.
$\frac{1}{4}$ of 1 pint is — gill.
1 pint is — of a quart.
4 gills are — of a quart.
2 gills are — of a pint.
1 gill is — of a pint.

Lesson 18.



How many dots are in each rectangle?

Write the number *ten* in figures.

Copy the rectangles, and write ten in figures under each rectangle.

Illustrate these questions, and express the answers by figures:

How many pint cans will five quarts of milk fill?

If five apples are each cut into halves, how many pieces of apple will there be?

Eight boys and two girls were in a class. How many pupils were in the class?

If you have seven apples, how many more apples will you need to make ten apples?

In our little duck-pond there are three old ducks and seven ducklings. How many are there in all?

Two three-cent pieces and two two-cent pieces are how much money?

Two pentagons ⬠ ⬠ have how many sides?

With ///// ///// how many ⬠'s can you make?

If you put five boxes in a row, how many rows will ▱ ▱ ▱ ▱ ▱ ▱ ▱ ▱ ▱ ▱ make?

A little girl made ten dots on the board. If she put • • • • • in each row, how many rows of dots did she make?

Lesson 19.

How many five-pointed stars can you make with //////////?

After making □ □ with ten sticks, how many sticks will you have over?

After making △△△ with ten sticks, how many sticks will you have over?

How many squares and triangles together can you make with //////////?

Eddie wished to make ⬠ ⬠, but had only eight sticks to work with. How many more sticks did he need?

Nellie wished to make a ☆, but had only seven sticks. How many more sticks did she need?

Jessie had ten sticks to work with. She made this ⌂ first. What other figure could she make?

How many legs have five clothes-pins?

How many legs have ?

How many rockers have five rocking-chairs?

One-half of ////////// are how many sticks?

A horse has one toe on each foot. How many more toes have you than a horse?

If you gave a ten-cent piece for a paper of needles which is sold for six cents, how many cents ought you to receive in return?

Five boys and five girls are how many children?

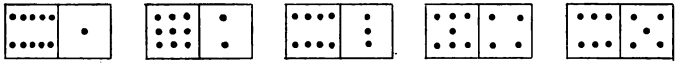
If a star has five points, how many points have two stars?

CHAPTER III.

NUMBERS FROM ELEVEN TO FIFTEEN.

Lesson 1.

ELEVEN. 11.



There are ten sticks in the bundle.

How many single sticks are there besides the bundle of ten?

How many are ten and one more?

Write the word *eleven.*

Express the number eleven in figures.

Write all the facts that you can find in eleven.

Make a picture to show that nine and two are eleven.

Make a picture to show that eleven minus two are nine.

Write a story about nine birds flying after crumbs, and two birds trying to get a worm, and tell how many birds there were altogether.

Write a story about eleven pin-wheels, and tell how many you had left if you spoiled two.

Write a story about eleven boxes in a pile, and tell how many were left in the pile if nine fell off.

Lesson 2.

With /// /// /// // how many triangles can you form, and how many sticks will you have over?

With //// //// /// how many squares and triangles can you form if you use all of the sticks?

Two squares and a triangle have how many corners?

If you spend four two-cent pieces and a three-cent piece or candy, how much do you spend?

Annie has a five-cent piece, a two-cent piece, and four single cents. How much money has she?

What two pieces of money make eleven cents?

What three pieces of money make eleven cents?

What four pieces of money make eleven cents?

A week and four days are how many days?

After forming this from eleven sticks, how many sticks remain?

After forming this from eleven sticks, how many sticks remain?

After forming this from eleven sticks, how many sticks remain?

Give the sum of the numbers instantly:

3	3	2	3	4	2	5	2	4	3	5	5
2	4	3	3	3	4	3	5	2	5	2	4

3	4	6	7	5	3	3	5	6	4	4	2
6	5	3	2	2	2	3	3	3	3	4	7

Lesson 3.

THE SIGN =.

The sign = stands for ARE.

Complete these sentences, and use the sign which stands for *are:*

6 and 1	7.	7 minus 2	5.
5 and 2	7.	7 minus 4	3.
4 and 2	6.	7 minus 5	2.
5 and 3	8.	7 minus 3	4.
6 and 2	8.	8 minus 2	6.
6 and 3	9.	8 minus 3	5.
7 and 2	9.	8 minus 5	3.
5 and 4	9.	8 minus 6	2.

Complete these sentences:

3 and 2 = ?	5 and 3 = ?	2 threes = ?	3 twos = ?
2 and 4 = ?	5 and 2 = ?	3 threes = ?	4 twos = ?
3 and 4 = ?	2 and 6 = ?	2 twos = ?	2 fours = ?

Draw six lines from left to right, and five lines up and down. How many lines have you drawn?

Draw six flower-pots with saucers, and five without saucers. How many have you drawn?

With eleven cents, how many Easter eggs, at six cents each, can you buy, and how many cents will you have left?

A boy has eleven cents. If one piece of his money is

, and the rest is in single cents, how many single cents has he?

Lesson 4.

THE SIGN +.

The sign + stands for AND.

Complete these sentences, using the sign +:

7	2 = 9.	4	3 = 7.
6	3 = 9.	3	7 = 10.
5	4 = 9.	8	2 = 10.
5	3 = 8.	5	2 = 7.
6	2 = 8.	4	2 = 6.

Complete these sentences:

3 + 2 = ?	4 + 2 = ?	4 + 3 = ?	6 + 3 = ?
5 + 2 = ?	6 + 2 = ?	7 + 3 = ?	3 + 4 = ?
7 + 2 = ?	8 + 2 = ?	5 + 3 = ?	5 + 4 = ?

Tell quickly what number to put with /// to make eleven; with //// ////; with /// /// ///; with ////; with /// /// /; with /// //; with //; with /// ///.

How many eggs, at the rate of can be bought for eleven cents?

How many apples, , can be bought for eleven cents?

How many quarts and what part of a quart can you put into a can that holds eleven pints?

How many pints of syrup can you put into a pail that holds eleven gills, if there are three gills of syrup already in the pail?

Lesson 5.

THE SIGN —.

The sign — stands for MINUS.

Complete these sentences, using the sign —:

7	4 = 3.	8	4 = 4.
7	3 = 4.	8	3 = 5.
7	2 = 5.	8	5 = 3.
7	5 = 2.	8	6 = 2.

Copy and complete:

10 − 9 = ?	10 − 6 = ?	2 + 8 =	8 + 2 = ?
10 − 7 = ?	10 − 4 = ?	3 + 7 =	5 + 5 = ?
10 − 3 = ?	10 − 5 = ?	6 + 4 =	10 + 0 = ?
10 − 8 = ?	10 − 0 = ?	7 + 3 =	9 + 2 = ?
10 − 2 = ?	9 − 2 = ?	4 + 6 =	8 + 3 = ?

How many square inches of paper will cover a rectangle that is five and one-half inches long and two inches wide?

How many lines and angles has a square that has a line through the centre from corner to corner?

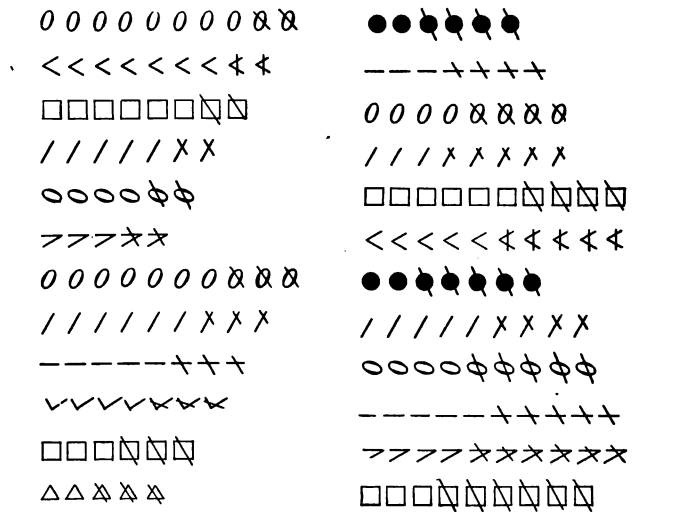
How many lines and angles has a triangle that is divided into halves?

Give the sum instantly:

8	7	9	2	4	3	4	6	7	5	6	7	8	6
3	4	2	3	2	5	3	2	2	2	4	3	2	5
2	7	6	3	5	4	3	5	7	6	3	6	4	4
5	3	4	7	5	6	6	4	2	3	5	2	3	5

Lesson 6.

Express what is illustrated, using figures and signs of operation:



Copy and complete:

2 ones = ?	½ of 2 = ?	8 + = 10.
2 twos = ?	½ of 4 = ?	2 + = 10.
3 twos = ?	¼ of 4 = ?	7 + = 10.
4 twos = ?	½ of 6 = ?	3 + = 10.
5 twos = ?	⅓ of 6 = ?	6 + = 10.
2 threes = ?	½ of 8 = ?	4 + = 10.
3 threes = ?	¼ of 8 = ?	5 + = 10.
2 fours = ?	½ of 10 = ?	10 − = 8.
2 fives = ?	⅓ of 3 = ?	10 − = 2.
5 ones = ?	⅓ of 9 = ?	10 − = 7.

Lesson 7.

How many sticks are in the bundle? How many sticks are there besides the bundle?

How many are ten and two?

Express the number twelve in figures.

Find every two numbers which together make twelve.

Give a story about ten bells on one cart, and two bells on another, and tell how many bells there were in all.

Give a story about twelve eggs sent to market, and tell how many there were if two were broken on the way.

Give a story about twelve flies in a spider's web, and tell how many the spider found if ten got away.

How many twos are there in ten? How many more twos are twelve than ten? How many twos then in twelve?

Twelve boots are how many pairs of boots?

If you have twelve cents in two-cent pieces, how many two-cent pieces have you?

If, then, you have six two-cent pieces, how much money have you?

Two flies have six times as many legs as a boy. How many legs have two flies?

Lesson 8.

Draw three pictures to show that nine and three are twelve.

Give a story for each picture.

If you have three three-cent pieces and three one-cent pieces, how much money have you?

If you begin school at nine in the morning, and are in school three hours, what time is it when you are dismissed?

If there are twelve pens in a box, and three are used, how many pens will be left in the box?

A boy picked twelve quarts of berries. He sold nine quarts. How many quarts had he then?

From twelve spools of thread nine have been used. How many are left?

How many threes in nine?

How many more threes are twelve than nine?

How many threes, then, in twelve?

If you have twelve cents in three-cent pieces, how many three-cent pieces have you?

How many three-quart pails will it take to hold twelve quarts of cranberries?

Count by threes to twelve.

How many threes make twelve?

A little basket watch-stand has three legs. How many legs will four such watch-stands have?

If each horse-car takes three horses, how many horses will four horse-cars take?

Lesson 9.

THE SIGN ×.

If one clover stem has three leaves, how many leaves have two clover stems?

Here is a new way for writing Two threes are six: $2 \times 3 = 6$.

If one fork has two tines, how many tines have three forks?

We write Three twos are six in this way: $3 \times 2 = 6$.

If one table has four legs, how many legs have two tables?

Express, with figures and signs:

Two fours are eight.

If a pansy has five petals, how many petals have two pansies?

If there are three blocks in a row, and three rows, how many blocks in the three rows?

Express with figures and signs:

Two fives are ten.	Five twos are ten.
Two twos are four.	Three threes are nine.
Three twos are six.	Four twos are eight.

Copy:

$3 \times 2 = 6$.	$5 \times 2 = 10$.	$3 \times 3 = 9$.
$4 \times 2 = 8$.	$2 \times 3 = 6$.	$2 \times 5 = 10$.

Lesson 10.

Draw twelve cherries, and have them in four equal bunches.

What part of twelve is each bunch?

How many are in each fourth of twelve?

There are twelve months in a year. One-fourth of the year is how many months?

Summer is ¼ of the year. How long is summer?

Winter is ¼ of the year. How long is winter?

If I divide twelve pears equally among four little girls, how many pears shall I give to each girl?

We call twelve a *dozen.*

A dozen eggs are how many eggs?

A dozen fruit cans are how many cans?

A dozen persons are how many persons?

Whenever you hear the word *dozen,* of what number will you think?

How many pairs of boots in a dozen boots?

A dozen pounds of starch will make how many packages of three pounds each?

If I have a dozen geranium blossoms, and one-fourth of them drop off, how many blossoms drop off?

If I use a quarter of a dozen eggs, how many eggs shall I use?

I had a box with a dozen spools of thread in it. If the spools were arranged in four equal rows, how many spools were in each row?

Lesson 11.

Draw two pictures to show that eight and four are twelve.

Give a story for each picture.

In an orchard are eight apple trees and four pear trees. How many trees are in the orchard?

A wheel that has only eight spokes needs how many more spokes to make twelve spokes?

When dates are eight cents a pound, and figs twelve cents a pound, what is the difference in price?

How many fours in eight? How many more fours are twelve than eight? How many fours in twelve?

If you have twelve sticks of equal length, how many separate squares can you form with them?

A ten-cent piece and a two-cent piece will buy how many oranges at four cents apiece?

What will three oranges cost, at four cents each?

Three horses have how many legs altogether?

Three squares have how many sides?

If you divide twelve into three equal parts, how many will there be in each part?

What, then, is one-third of twelve?

Susie had a dozen paper dolls, but a third of them got torn. How many got torn?

A man who had a dozen balloons to sell, sold a third of them. How many did he sell?

Lesson 12.

Draw a picture to show how many seven and five are; and give a story about the picture.

If I have seven peaches, how many more peaches must I have to make a dozen peaches?

If I lack five of a dozen, how many have I?

A dozen turkeys went off in the wet grass one morning, and only seven came back. How many were missing?

Twelve milk-cans were drying on a bench, but the wind blew seven off on the ground. How many cans were left on the bench?

John had but five cents this morning. Now he has twelve cents. How many cents has he earned through the day?

Give the sum of each two numbers instantly:

3	3	2	5	2	2	6	3	4	2
2	4	3	2	3	5	2	5	3	6

Copy, and complete:

10 + 2 = ?	12 − 9 = ?	10 + = 12.
9 + 3 = ?	12 − 4 = ?	9 + = 12.
8 + 4 = ?	12 − 8 = ?	8 + = 12.
7 + 5 = ?	12 − 5 = ?	7 + = 12.
6 + 6 = ?	12 − 7 = ?	6 + = 12.
12 − 2 = ?	12 − 6 = ?	5 + = 12.
12 − 10 = ?	4 + 8 = ?	4 + = 12.
12 − 3 = ?	5 + 7 = ?	3 + = 12.

Lesson 13.

Draw a picture to show how many six and six are.

Give a story about the picture.

Twelve is how many more than six?

Six and how many more are twelve?

If there are a dozen books in one pile, and six in another pile, how many more books are in one pile than in the other?

If six and six are twelve, how many sixes in twelve?

Twelve apples will make how many puddings if six apples are used for each pudding?

If you find two sixes in twelve, how many are two sixes?

Two window sashes with six panes of glass in each sash contain how many panes of glass?

Two cubes have how many faces?

If you divide twelve into two equal parts, what number will be in each part?

How many eggs in a half-dozen eggs?

How many months in half a year?

If a rule is twelve inches long, how long is half the rule?

It takes twelve hours for the short hand to go round the face of the clock. How many hours will it take the hand to go half-way round?

Six is what part of twelve?

Lesson 14.

THE FOOT.

Take your foot ruler.

Measure off a foot on your desk.

Name something that is a foot long.

Draw on the board a horizontal line a foot long.

Draw a vertical line a foot long.

Draw a slanting line a foot long.

How many feet long is the edge of the table?

What is the width of the door?

What is the width of the window?

Your ruler is marked off into short distances. How long is each distance?

How many inches long is the foot measure?

A square that is half of a foot on each side is how many inches square?

A square that is one-fourth of a foot on each side contains how many square inches?

How far is it around a triangle that is one-third of a foot on each side?

Copy and complete:

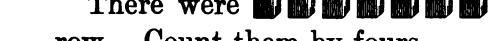
12 inches = ?	$\frac{1}{2}$ of 1 year = ?
12 things = ?	$\frac{1}{3}$ of 1 year = ?
12 months = ?	$\frac{1}{4}$ of 1 year = ?
$\frac{1}{2}$ of 1 dozen = ?	$\frac{1}{2}$ of 1 foot = ?
$\frac{1}{4}$ of 1 dozen = ?	$\frac{1}{4}$ of 1 foot = ?
$\frac{1}{3}$ of 1 dozen = ?	$\frac{1}{3}$ of 1 foot = ?

Lesson 15.

REVIEW.

There were in a dish. Count them by twos.

There were O O O O O O O O O O in a nest. Count them by threes.

There were  in a row. Count them by fours.

Some children were playing "Odd or Even" with beans. Each had twelve to start with. When the game was over:

Eddie had eight. How many had he lost?

Susie had five? How many had she lost?

Mamie had three. How many had she lost?

John had ten. How many had he lost?

Harry had seven. How many had he lost?

Fred had six. How many had he lost?

What two pieces of money make twelve cents?

What four equal numbers make twelve?

What three equal numbers make twelve?

What six equal numbers make twelve?

What two equal numbers make twelve?

How many separate angles can you form from twelve sticks?

How many separate triangles can you form?

How many separate squares can you form?

How many squares with a triangle on top can you form?

Lesson 16.

How many sticks are in the bundle? How many sticks are there besides the bundle?

How many are ten and three?

Express thirteen in figures.

Find every two numbers which together make thirteen.

Give a story about ten eggs in one nest and three eggs in another, and tell how many eggs were in both nests.

Give a story about thirteen cherries, and tell how many were left if you ate three.

Give a story about thirteen birds on the ground, and tell how many were left if ten flew away.

Nine red Easter eggs and four blue Easter eggs are how many eggs?

There were thirteen rosebuds on a bush. If four blossomed out, how many rosebuds were left?

There were thirteen dolls in a shop window. How many were left if four dolls were sold?

There were thirteen white mice in a box. How many were left in the box if nine jumped out?

Give the sum of each two numbers instantly:

4	5	3	2	6	3	2	5	5	6	7	8	6	7
3	2	4	5	2	5	6	3	4	3	3	2	5	4

Lesson 17.

Draw a picture to show how many eight and five are.

A table that is eight feet long and five feet wide measures how many feet on one side and one end together?

If this room is thirteen feet wide, how much wider is it than a room only eight feet wide?

If there are thirteen matches in a card, and I use five, how many will be left?

Annie had eight cents, and Nellie had five cents Annie paid Nellie one cent. How many cents had each then? How many had they together?

Write a story about seven stars that you saw in one group, and six that you saw in another group, and tell how many stars were in both groups.

There are thirteen pegs on a hat-rack. Six are covered with hats. How many pegs are empty?

Think of the number thirteen and tell instantly what number to put with ten to make thirteen; with three; with nine; with four; with eight; with five; with seven; with six.

Give the sum of each two numbers instantly:

9	8	2	3	7	6	4	5	8	9
2	3	9	8	4	5	7	6	3	2
9	10	3	2	4	7	8	5	6	8
3	2	9	10	8	5	4	7	6	4

Lesson 18.

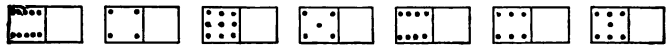
How many sticks are in the bundle? How many sticks are there besides the ten sticks?

How many are ten and four?

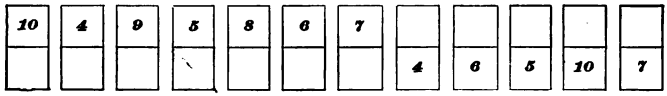
Express fourteen in figures.

Find every two numbers which together make fourteen.

Put in the blank half of these cards enough dots to make fourteen dots on each card.



Write in the blank half of these cards the number that is needed to make fourteen.



Give a story about ten hens on the roost and four on the ground, and tell how many hens there were in all.

Give a story about a rod that was fourteen feet long, and tell how long it was if ten feet of the rod were cut off.

Give a story about fourteen mice that an owl caught, and tell how many he had if four got away.

Lesson 19.

How many twos in ten?

How many more twos are in fourteen? How many twos, then, in fourteen?

If John has fourteen cents in two-cent pieces, how many two-cent pieces has he?

Seven two-cent pieces are how much money?

If the blackboard is fourteen feet long, how many two-foot rules can be placed along its edge?

Fourteen shoes are how many pairs of shoes?

Seven boys will wear how many shoes?

Seven pairs of skates are how many skates?

Give a story for each of these facts:

2 in 14 = 7. $2 \times 7 = 14$. $10 + 4 = 14$.

Tell the sum of each two numbers instantly:

10	9	8	7	4	5	6	10	9	8	7
4	5	6	7	10	9	8	3	4	5	6

10	9	8	7	6	9	5	6	9	3	4
2	3	4	5	6	4	8	7	5	9	8

Tell the difference of each two numbers instantly:

14	14	14	14	14	14	14	14
−4	−10	−5	−9	−6	−8	−7	−2

13	13	13	13	13	13	13	13
−3	−10	−4	−9	−5	−8	−6	−7

Lesson 20.

Make a picture to show how many nine and five are.

How much money are three three-cent pieces and a five-cent piece?

Annie bought three pears at three cents each and five apples at a cent each. How much money did she spend?

Jennie had fourteen little cakes. She gave three to each of her three brothers, and gave the rest to her mother. How many did she give her mother?

John and Harry had each a ball. John kept his ball a week and two days. Harry kept his two weeks. How many days longer did Harry keep his ball than John did his?

I bought two chairs last week. One cost five dollars, and the other fourteen dollars. What was the difference in price?

Two squares and two triangles have how many corners together?

A spider with eight legs, and a fly with six legs, have how many legs together?

A farmer who had fourteen sheep sold six sheep. How many sheep had he left?

If you have three three-cent pieces of money, and a five-cent piece, and buy four bananas at two cents each, how much money will you have left?

Lesson 21.

What two equal numbers make fourteen?

What is one-half of fourteen?

Nellie is fourteen years old. How old was she when she was only half as old as she is now?

If I can ride fourteen miles on my car-ticket, and I use half of my ticket, how many miles do I ride?

In fourteen days how many weeks?

How many sticks, each seven feet long, can be cut from a pole fourteen feet long?

If two rods, each seven feet long, are laid end to end, how many feet will they reach?

Two weeks have how many days?

Give the difference instantly:

7	7	7	7	8	8	8	8
−2	−5	−4	−3	−2	−6	−3	−5

Copy, and complete:

12 things	= ?	½ of a foot	= ?
12 inches	= ?	¼ of a foot	= ?
12 months	= ?	⅓ of a foot	= ?
4 gills	= ?	½ of a dozen	= ?
2 pints	= ?	¼ of a dozen	= ?
1 dozen	= ?	⅓ of a dozen	= ?
1 foot	= ?	½ of a year	= ?
1 year	= ?	¼ of a year	= ?
1 pint	= ?	⅓ of a year	= ?
1 quart	= ?	½ of a fortnight	= ?

Lesson 22.

REVIEW.

If each letter takes a two-cent stamp, how much will it cost to send seven letters? Fourteen cents will buy how many two-cent stamps?

I have a square box whose edge is seven inches. How many inches is it half-way round the box?

Harry picked ten quarts of blueberries and four quarts of huckleberries. He sold half of his berries. How many quarts did he sell?

If note-paper is seven cents a quire, how much will two quires cost?

For fourteen cents, how many bunches of envelopes, at seven cents a bunch, can you buy?

Copy and complete:

$7 \times 2 = ?$	$7 + 7 = ?$	$\frac{1}{2}$ of $14 = ?$
2 in $14 = ?$	$2 \times 7 = ?$	$\frac{1}{2}$ of $12 = ?$

There were nine yellow apples in one basket, and five red apples in another basket. How many apples were in both baskets?

The cook used five yellow apples and four red apples for pies. How many apples were left?

If the cook had used only five apples, how many apples would have remained?

Ned bought four sticks of taffy at two cents apiece, and a toy watch for six cents. How much money did he spend?

Lesson 23.

REVIEW.

Nellie had two weeks' vacation. She spent six days at home, and the rest of her vacation with her aunt. How many days did she stay with her aunt?

Ned's birthday is the fourteenth of the month. If his mamma buys his birthday present eight days before, on what day of the month does she buy it?

Copy, and complete:

9 + 5 = ?	14 − 6 = ?	7 in 14 = ?
8 + 6 = ?	14 − 8 = ?	2 in 14 = ?
14 − 9 = ?	14 − 2 = ?	6 in 12 = ?
14 − 5 = ?	14 − 12 = ?	2 in 12 = ?

How many inches long is a stick that is one-half of a foot long?

My penholder is half of a foot and three inches long. How many inches long is my penholder?

My pencil is one-fourth of a foot long. How many inches in length is my pencil?

If the cook uses one-fourth of a dozen eggs for a custard pudding, how many eggs does she use?

If I distribute a dozen cookies equally among three children, how many shall I give to each?

It takes twelve months to make a year. How many months are there in one-fourth of a year?

The year is divided into four seasons. How many months has each season?

Lesson 24.

THE YARD.

What have you seen measured with a yard measure?

What is bought by the yard?

What can you see that is a yard long?

What have you seen at home that was a yard long?

How wide is each strip of carpet that covers your room?

Measure off a yard with a foot-rule, and find how many feet it takes to make a yard.

If the window is a yard wide, how many feet wide is the window?

If the carpet is a yard wide, how many feet wide is it?

If you are a yard tall, how many feet tall are you?

The baby is two feet tall, and George is a yard tall. How many feet taller than the baby is George?

If the platform is twelve feet across, how many yards across is it?

If the table is six feet long, how many yards long is it?

If a room is nine feet high, how many yards high is the room?

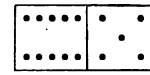
If a stick is three feet long, how many yards long is the stick?

CHAPTER IV.

NUMBERS FROM FIFTEEN TO TWENTY.

Lesson 1.

FIFTEEN. 15.



How many sticks are in the bundle?

How many single sticks are there besides the bundle?

Express fifteen in figures.

Give a problem about a ten-cent balloon, and a five-cent top, and tell how much both cost.

Give a problem about fifteen cents which you had to spend, and tell how many cents you had left if you bought a ten-cent slate.

If a yard of cloth costs ten cents, what will a yard and a half cost?

If you have fifteen cents, and buy a five-cent loaf of bread, how many cents will you have left?

If there are fifteen bananas in a bunch, and ten are sold, how many bananas are left in the bunch?

Give the sum of each two numbers instantly:

6	8	7	9	5	3	4	2	6	7
5	3	4	2	6	8	7	9	4	3

Lesson 2.

How many fives in ten?

How many more fives will give fifteen? How many fives in fifteen then?

Give a problem about fifteen pears which you had, and tell how many boys you could give them to if you gave five to each boy.

How many five-cent whistles can I buy for fifteen cents?

If Nellie has fifteen cents in five-cent pieces, how many five-cent pieces has she?

Three five-cent pieces are how much money?

Give a problem about the number of days you go to school in three weeks, if you go five days each week.

A pansy-blossom has five petals. How many petals have three pansy-blossoms?

Three five-dollar gold-pieces are how many dollars?

What three equal numbers make fifteen? What, then, is one-third of fifteen?

A farmer bought fifteen hens. One-third of the number were black. How many were black?

Copy, and complete:

$\frac{1}{3}$ of 15 = ?	$\frac{1}{3}$ of 3 = ?	$\frac{1}{2}$ of 8 = ?
$\frac{1}{3}$ of 12 = ?	$\frac{1}{2}$ of 14 = ?	$\frac{1}{2}$ of 6 = ?
$\frac{1}{3}$ of 9 = ?	$\frac{1}{2}$ of 12 = ?	$\frac{1}{2}$ of 4 = ?
$\frac{1}{3}$ of 6 = ?	$\frac{1}{2}$ of 10 = ?	$\frac{1}{2}$ of 2 = ?

Lesson 3.

How many threes make twelve? How many more threes make fifteen? How many threes make fifteen, then?

Fifteen cents will buy how many three-cent lead-pencils? How many three-cent rubbers? How many three-cent newspapers?

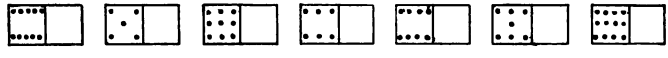
Five pencils at three cents each cost how much?

Five triangles have how many sides? How many corners?

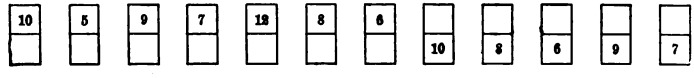
How many feet are in five yards of string?

Find each pair of numbers that make fifteen.

Put in the blank half of these cards enough dots to make fifteen on each card:



Write in the blank half of these cards the number that is needed to make fifteen:



Think of the number fifteen and tell instantly what number to put with five to make fifteen; with ten; with nine; with six; with eight; with seven; with twelve; with three.

Give the sum of each two numbers instantly:

10	10	10	10	9	9	9	9	4	6
2	3	4	5	3	4	5	6	9	9

Lesson 4.

THE GALLON.

The largest measure which is shown you here is a *gallon measure.*

Which holds more, a quart or a gallon measure?

If you dip out a *gallon* of water with a quart measure, you must dip the quart measure *four* times full.

How many quarts, then, make a gallon?

In a gallon of vinegar how many quarts?

If I buy a gallon of molasses, how many quarts of molasses do I buy?

In half a gallon of oil how many quarts of oil?

In a half-gallon of water how many quarts of water?

How many two-quart pails are required to hold a gallon of milk?

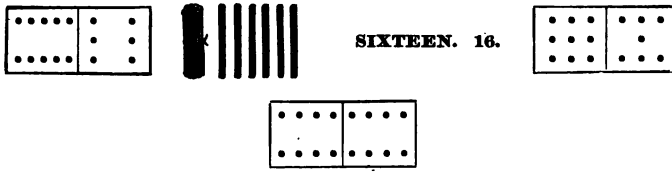
How many pint pails are required to hold a gallon of milk?

If a pint of water weighs one pound, how much will a gallon of water weigh?

If a pint of water weighs one pound, how much will a gill of water weigh?

At one cent a pint, what will a gallon of skim-milk cost?

Lesson 5.



How many sticks are in the bundle?

How many single sticks are there besides the ten sticks?

How many are ten and six?

Express sixteen in figures.

Give a story about ten lamps and six lamps, and tell how many lamps there are in all.

Give a story about sixteen dolls that a lady had to dress for the fair, and tell how many were left to dress after she had dressed six.

Give a story about sixteen cents that you earned, and tell how many cents you had if you spent ten cents for a book.

A ten-cent piece and two three-cent pieces are how much money?

A ten-cent piece and three two-cent pieces are how much money?

Two five-cent pieces and two three-cent pieces are how much money?

There were sixteen swallows' nests in a bank, but the bank caved in and destroyed six nests. How many nests were then in the bank?

Lesson 6.

What two numbers can you make by taking one from ten and putting it with six?

Nine and seven are how many?

Give a problem for nine and seven.

If Henry finds nine eggs in one nest and seven in another, how many eggs does he find in all?

In two pods there were sixteen peas. If there were nine peas in one pod, how many peas were there in the other pod?

An old ladder had several rounds broken out. When it was new it had sixteen rounds; now only seven remain. How many have been broken?

If John has nine pears, and James seven pears, how many must John give James in order that each may have the same number of pears?

What number will each have then?

Two boys had sixteen small pears which they divided equally between themselves. How many pears had each?

How many eights in sixteen?

If an ox takes eight shoes, how many oxen will sixteen shoes supply?

Two oxen will wear how many shoes, if each ox wears eight shoes?

What two equal numbers in sixteen?

What, then, is one-half of sixteen?

Eight is what part of sixteen?

Lesson 7.

How many fours in eight? in two eights?

How many fours in sixteen, then?

Sixteen quarts of milk will fill how many gallon cans?

How many shoes will four horses wear?

Four chairs have how many legs?

Four squares have how many sides?

What four equal numbers make sixteen?

What part of sixteen is each of the numbers?

What, then, is one-fourth of sixteen?

A summer day is sixteen hours long. How long is a fourth of the day?

This string is five yards and a foot long. How many feet long is one-fourth of the string?

Edwin had sixteen hens, but he sold four hens. What part of his whole number of hens did he sell?

Copy and complete:

½ of 16 = ?	½ of 8 = ?	2 × 8 = ?
¼ of 16 = ?	¼ of 8 = ?	4 × 4 = ?
½ of 12 = ?	½ of 4 = ?	3 × 5 = ?
¼ of 12 = ?	¼ of 4 = ?	7 × 2 = ?

10	10	10	10	11	11	11	11	11	11
−4	−7	−6	−3	−6	−4	−3	−5	−7	−6

11	11	11	12	12	12	12	12	12	12
−8	−2	−9	−3	−6	−9	−7	−5	−8	−4

Lesson 8.

How many twos in ten? How many twos in six? How many twos in sixteen, then?

Sixteen gloves are how many pairs of gloves?

Sixteen pints are how many quarts?

Sixteen cents will buy how many two-cent sponges?

If there are eight two-cent pieces in my purse, how much money is in my purse?

Eight spans of horses are how many horses?

Eight yokes of oxen are how many oxen?

Give the sum of each two numbers quickly:

7	9	7	8	6	4	5	9	8	5	9	8
5	4	6	5	7	9	8	5	6	9	6	7

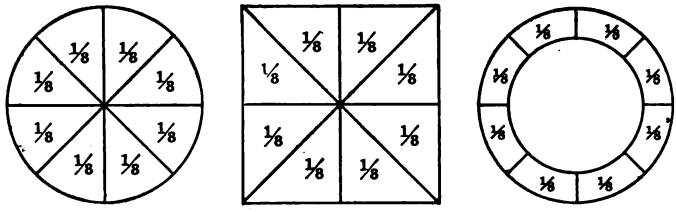
Tell the difference quickly:

15	15	15	15	15	15	15	14	14	14
−10	−7	−5	−8	−9	−6	−3	−7	−4	−8

Copy and complete:

$2 \times 7 = ?$	7 in 14 = ?	$\frac{1}{2}$ of 14 = ?
$2 \times 6 = ?$	2 in 14 = ?	$\frac{1}{2}$ of 12 = ?
$2 \times 5 = ?$	6 in 12 = ?	$\frac{1}{3}$ of 12 = ?
$3 \times 5 = ?$	3 in 12 = ?	$\frac{1}{4}$ of 12 = ?
$3 \times 4 = ?$	4 in 12 = ?	$\frac{1}{3}$ of 15 = ?
$3 \times 3 = ?$	3 in 15 = ?	$\frac{1}{3}$ of 6 = ?
$4 \times 3 = ?$	5 in 15 = ?	$\frac{1}{3}$ of 9 = ?

Lesson 9.



Into how many parts is the circle divided?

How do the parts compare in size?

Each of the eight equal parts of the circle is *one-eighth* of the circle.

Point to one-eighth of the circle.

Into what is the ring divided?

Find an eighth of the ring.

What part of the whole square is each one of the equal parts into which the square is divided?

Draw a triangle. Divide the base into eighths. Connect the vertex of the triangle with each point of division in the base. Into what is the large triangle divided?

Build a cube of eight small cubes.

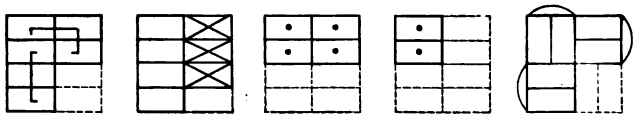
Divide the cube into halves. Divide the cube into fourths. Divide the cube into eighths.

Build a rectangular body of sixteen cubes. Divide it into halves. Divide into fourths. Divide it into eighths.

What is one-eighth of sixteen?

What is one-eighth of eight?

Lesson 10.

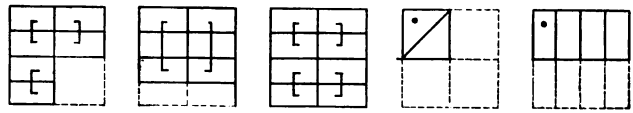


The squares will show you the answers:

How many eighths are $\frac{3}{8} + \frac{3}{8}$?
How many eighths are $\frac{7}{8} - \frac{3}{8}$?
How many eighths are in $\frac{1}{2}$?
How many eighths are in $\frac{1}{4}$?
How many fourths are in $\frac{6}{8}$?

Draw squares to show the answers:

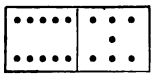
$\frac{3}{8} + \frac{1}{8} = ?$ $\quad \frac{1}{2} =$ how many eighths?
$\frac{3}{8} - \frac{1}{8} = ?$ $\quad \frac{1}{4} =$ how many eighths?
$\frac{5}{8} - \frac{3}{8} = ?$ $\quad \frac{3}{4} =$ how many eighths?
$\frac{5}{8} + \frac{3}{8} = ?$ $\quad \frac{2}{4} =$ how many eighths?
$\frac{4}{8} + \frac{3}{8} = ?$ $\quad \frac{4}{8} =$ how many fourths?
$\frac{2}{8} + \frac{4}{8} = ?$ $\quad \frac{6}{8} =$ how many fourths?



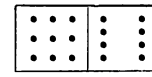
The squares will show you the answers:

$3 \times \frac{2}{8}$ are how many eighths?
$2 \times \frac{3}{8}$ are how many eighths?
$4 \times \frac{2}{8}$ are how many eighths?
$\frac{1}{2}$ of $\frac{1}{4}$ is how many eighths?
$\frac{1}{4}$ of $\frac{1}{2}$ is how many eighths?

Lesson 11.



SEVENTEEN. 17.



How many sticks are in the bundle? How many single sticks are there besides?

How many are ten and seven?

Express seventeen in figures.

Give a story about ten boys that were playing ball, and seven that were playing marbles, and tell how many there were playing in all.

Give a story about seventeen doves that were on the roof, and tell how many remained if seven doves flew down.

Give a story about seventeen china dogs that were in the shop window, and tell how many remained if ten dogs were sold.

There were ten geranium blossoms on a plant yesterday. Now there are seven more blossoms. How many blossoms are on the plant?

If one of yesterday's blossoms drop off, how many old blossoms will remain? If one more new blossom comes, how many blossoms will there be?

Three three-cent pieces and four two-cent pieces are how much money?

Name two numbers one of which is one more than the other, that together make seventeen.

Amy is seventeen years old. How old was she seven years ago? ten years ago? nine years ago?

Lesson 12.

How many sticks are in the bundle? How many single sticks are there besides?

How many are ten and eight?

Express eighteen in figures.

If you take one from ten and put it with eight, what two equal numbers will you have?

What is the sum of nine and nine?

Since nine and nine make eighteen, how many nines are there in eighteen?

I ironed eighteen handkerchiefs, and laid them in piles with nine in each pile. How many piles did I make?

Into what two equal numbers may eighteen be divided?

What part of eighteen is each number? What, then, is one-half of eighteen?

We had eighteen young turkeys, but half of them strayed away in the wet grass and died. How many had we then?

What number taken twice equals eighteen? What will two nines equal, then?

If each ball club has nine boys, how many boys will it take for two ball clubs?

If there are nine rings on one curtain rod, how many are there on two curtain rods?

Lesson 13.

Two girls were playing "Odd or Even" with beans. Nellie had ten beans, and Mamie had eight. If Nellie won two from Mamie, how many had each?

What two new numbers have you found make eighteen?

A dozen and a half are how many eggs?

A foot and a half are how many inches?

How many sixes in twelve? How many more sixes in eighteen? How many sixes, then, are there in eighteen?

In a box are eighteen pencils done up in bundles of six each. How many bundles are in the box?

A man packing eggs put a half-dozen in each layer. How many layers did eighteen eggs make?

What three equal numbers make eighteen?

What, then, is one-third of eighteen?

If eighteen cents will buy three yards of cloth, what does one yard of the cloth cost?

Ned has a rule which is eighteen inches long. Tom has one which is only one-third as long. How long is Tom's rule?

What number taken three times makes eighteen? Three sixes will equal what number, then?

If there are half-a-dozen pies on each shelf, how many pies are there on three shelves?

Three cubes have how many faces?

Lesson 14.

How many threes make fifteen? How many more threes make eighteen? How many threes, then, make eighteen?

Eighteen cents will buy how many three-cent pencils? How many three-cent books?

What number taken six times will equal eighteen? What will six threes equal, then?

Six triangles have how many sides? Have how many corners?

If you put a dot in each corner of six triangles, how many dots will you make?

Illustrate these stories and find the answers:

Two boatmen started at the same place. One rowed down the river nine miles, and the other rowed up the river nine miles. How far apart were the two men?

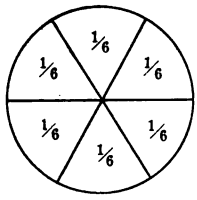
There were three rows of pies in the pantry, six in each row. How many pies were in the pantry?

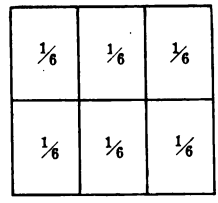
There were enough quart bottles on a shelf to hold eighteen pints. How many quart bottles were there on the shelf?

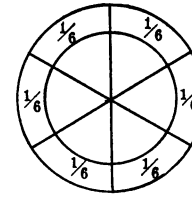
There were enough three-quart pickle jars to hold eighteen quarts of pickles. How many pickle jars did it take?

There were enough pans in the dairy to hold eighteen quarts of milk if six quarts were put in each pan. How many pans were there in the dairy?

Lesson 15.







Into how many parts is the circle divided?

How do the parts compare in size?

Each of the six equal parts into which the circle is divided is *one-sixth* of the circle.

Show one-sixth of the circle.

Show one-sixth of the square.

Show one-sixth of the ring.

Draw a rectangle. Divide the upper and lower bases into six equal parts. Draw lines from the points of division in the upper base to the points just below in the lower base. Into what parts is the rectangle divided?

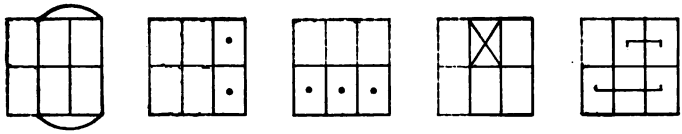
If you cut a strip of paper that is six inches long into sixths, how long will each piece be?

Build a wall with twelve cubes. Divide it into thirds. Divide it into sixths. How many blocks does one-sixth of the wall require?

Build a wall six cubes long and three cubes high. How many cubes do you use?

Divide it into thirds. Divide it into sixths. What is one-sixth of eighteen?

Lesson 16.

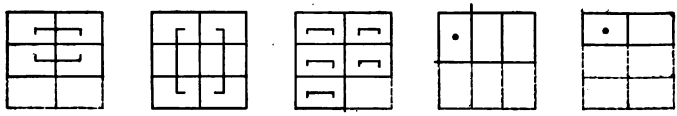


Find by the diagrams the answers:

How many sixths are $\frac{3}{6} + \frac{2}{6}$?
How many sixths are $\frac{4}{6} - \frac{1}{6}$?
How many sixths are in $\frac{1}{2}$?
How many sixths are in $\frac{1}{3}$?
How many thirds are in $\frac{4}{6}$?

Draw diagrams, and show the answers:

$\frac{3}{6} + \frac{1}{6} = ?$	$\frac{1}{2}$ = how many sixths?
$\frac{3}{6} - \frac{1}{6} = ?$	$\frac{1}{3}$ = how many sixths?
$\frac{3}{6} + \frac{3}{6} = ?$	$\frac{2}{3}$ = how many sixths?
$\frac{2}{6} + \frac{2}{6} = ?$	$\frac{4}{6}$ = how many thirds?
$\frac{5}{6} - \frac{4}{6} = ?$	$\frac{2}{6}$ = how many thirds?
$\frac{3}{6} + \frac{2}{6} = ?$	$\frac{3}{6}$ = how many halves?



Find by the diagrams the answers:

$2 \times \frac{2}{6}$ are how many sixths?
$2 \times \frac{3}{6}$ are how many sixths?
$5 \times \frac{1}{6}$ are how many sixths?
$\frac{1}{3}$ of $\frac{1}{2}$ are how many sixths?
$\frac{1}{2}$ of $\frac{1}{3}$ are how many sixths?

Lesson 17.

What six equal numbers make six?

What is one-sixth of six?

What six equal numbers make twelve?

What is one-sixth of twelve?

One-sixth of a dozen eggs is how many eggs?

One-sixth of a year is how many months?

One-sixth of a foot is how many inches?

What six equal numbers make eighteen?

What is one-sixth of eighteen?

I have a mat six feet long and three feet wide. How many square feet in one-sixth of the mat?

Into how many sixths can you cut a pie? Into how many fourths? Into how many thirds? Into how many halves?

Which is larger, a half or a sixth of the same pie? A half or a fourth of the same pie?

How many twos in sixteen? How many are sixteen and two? How many twos in eighteen?

How many pairs of gloves in eighteen gloves?

How many quarts in eighteen pints?

Eighteen shafts will supply how many wagons?

Nine two-cent pieces are how much money?

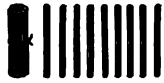
How many knobs are required for nine doors?

Nine oysters have how many shells?

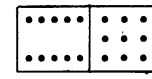
Nine leaves of a book have how many pages?

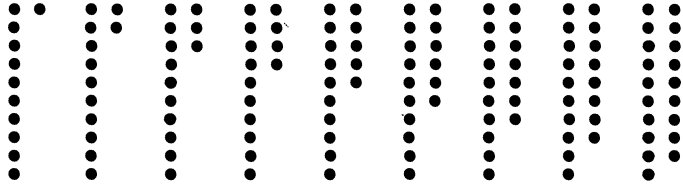
If a newspaper comes twice a week, how many times will it come in nine weeks?

Lesson 18.



NINETEEN. 19.





Express the number nineteen; express below it eighteen; seventeen; sixteen; fifteen; fourteen; thirteen; twelve; eleven; ten.

How many tens has each of these numbers?

Which number has the most ones besides the one ten?

Which number has the least number of ones besides the one ten?

Which number has eight ones besides the ten? seven ones? two ones? four ones? six ones? three ones? one more than ten?

Mark the column of tens; the column of ones.

What is the difference between none and nine? between ten and nineteen? between one and nine? between eleven and nineteen? between four and nine? between fourteen and nineteen? between five and eight? between fifteen and eighteen? between fourteen and eighteen? between fifteen and nineteen? between thirteen and sixteen?

Lesson 19.

Practise until you can name each sum instantly:

1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9
2	2	2	2	2	2	2	2	2	2
0	1	2	3	4	5	6	7	8	9
3	3	3	3	3	3	3	3	3	3
0	1	2	3	4	5	6	7	8	9
4	4	4	4	4	4	4	4	4	4
0	1	2	3	4	5	6	7	8	9
5	5	5	5	5	5	5	5	5	5
0	1	2	3	4	5	6	7	8	9
6	6	6	6	6	6	6	6	6	6
0	1	2	3	4	5	6	7	8	9
7	7	7	7	7	7	7	7	7	7
0	1	2	3	4	5	6	7	8	9
8	8	8	8	8	8	8	8	8	8
0	1	2	3	4	5	6	7	8	9
9	9	9	9	9	9	9	9	9	9
0	1	2	3	4	5	6	7	8	9
10	10	10	10	10	10	10	10	10	10
0	1	2	3	4	5	6	7	8	9

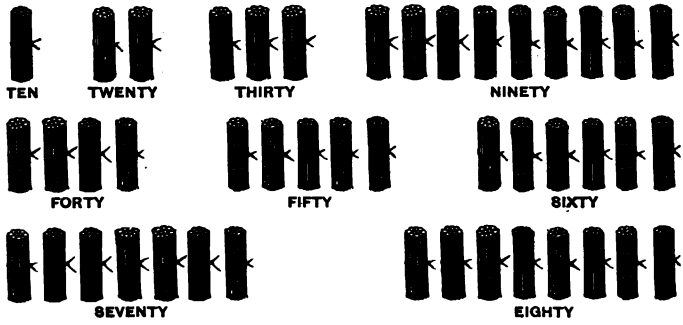
Lesson 20.

Name each remainder instantly:

1	2	3	4	5	6	7	8	9	10
−1	−1	−1	−1	−1	−1	−1	−1	−1	−1
2	3	4	5	6	7	8	9	10	11
−2	−2	−2	−2	−2	−2	−2	−2	−2	−2
3	4	5	6	7	8	9	10	11	12
−3	−3	−3	−3	−3	−3	−3	−3	−3	−3
4	5	6	7	8	9	10	11	12	13
−4	−4	−4	−4	−5	−5	−5	−5	−5	−5
5	6	7	8	9	10	11	12	13	14
−5	−5	−5	−5	−5	−5	−5	−5	−5	−5
6	7	8	9	10	11	12	13	14	15
−6	−6	−6	−6	−6	−6	−6	−6	−6	−6
7	8	9	10	11	12	13	14	15	16
−7	−7	−7	−7	−7	−7	−7	−7	−7	−7
8	9	10	11	12	13	14	15	16	17
−8	−8	−8	−8	−8	−8	−8	−8	−8	−8
9	10	11	12	13	14	15	16	17	18
−9	−9	−9	−9	−9	−9	−9	−9	−9	−9
10	11	12	13	14	15	16	17	18	19
−10	−10	−10	−10	−10	−10	−10	−10	−10	−10

Lesson 21.

TENS.



How many are two tens? three tens? four tens?

How many tens make sixty? ninety? fifty? seventy? thirty? eighty? forty? twenty?

What number do ten tens make?

In thirty how many tens? in twenty? in forty? in seventy? in ninety? in sixty? in eighty?

Show with bundles of tens the answers to:

Two ten-cent pieces make how much money?

Jennie bought four yards of calico at ten cents a yard. How much did she pay for the calico?

James bought five pounds of sugar at ten cents a pound. How much did he pay for the sugar?

There are eight rows of trees in an orchard, and ten trees in each row. How many trees are there in the orchard?

If a baker sells a loaf of bread for ten cents, how much will he receive for nine loaves of bread?

Lesson 22.

Express the number ten on the board.

Express just below it two tens or twenty; three tens or thirty; four tens or forty; fifty; sixty; seventy; eighty; ninety; ten tens or one hundred.

Write the number that has just two tens in it; just three tens in it; just six tens in it; just five tens in it; just seven tens in it; just eight tens in it.

Write these tens in a column. Which number has the least number of tens? Which number has the greatest number of tens?

How many fingers and toes have you?

Twenty hens and ten ducks are how many fowls?

If you read thirty minutes, and write ten minutes, how long a time do you work?

A small broom cost forty cents, and a dust-pan ten cents. How much did both cost? What part of a dollar is fifty cents?

If I have half a dollar, and you have ten cents, how much money have we together?

If a gallon of molasses cost sixty cents, and a pound of sugar ten cents, how much do both cost?

I bought peaches for seventy cents, and some pears for ten cents. How much did both cost?

A man had ten hens and eighty chickens. How many hens and chickens together had he?

We own a clock that is ninety years old. How old will it be in ten years from this time?

Lesson 23.

Two tens and three tens are how many tens?

Find the sum of thirty and forty by adding the tens.

Find the sum of fifty and forty in the same way.

Find the sum of fifty and twenty; of sixty and thirty; of forty and forty; of fifty and fifty; of seventy and twenty; of sixty and twenty; of twenty and thirty; of thirty and thirty; of thirty and fifty; of twenty and forty.

There are twenty quires of paper in a ream. How many quires of paper are there in two reams? in three reams? in four reams? in five reams?

Twenty years is called a *score* of years. How old is a man who is two score years? How old is a man who is four score years?

How many children were playing in the school-yard if there were three score of children?

Five twenty-dollar gold-pieces are how much money?

How many days are there in two months of thirty days each?

How many yards of carpeting will be required for three rooms, if each room takes thirty yards?

If a man who is now forty years old lives to be twice as old as he is now, how old will he be?

If you owe two half-dollars, how many cents do you owe?

Lesson 24.

Copy, and divide:

10)10	10)40	10)20	10)50	10)30
10)60	10)80	10)70	10)90	10)100

Copy, and multiply:

20	20	20	20	20	30
1	2	3	4	5	2
30	40	40	50	60	100
3	1	2	2	1	2

Copy, and add:

30	60	50	20	50	30
40	20	40	30	20	30
60	30	40	20	50	70
30	50	40	40	50	20
20	20	30	30	40	40
20	80	20	70	30	20
20	20	20	80	50	30
50	60	70	20	30	60
70	60	40	40	70	40
30	40	50	60	20	30

Lesson 25.

Copy, and divide:

10 in 30 = ?	10 in 90 = ?	10 in 60 = ?
10 in 40 = ?	10 in 50 = ?	10 in 80 = ?
10 in 70 = ?	10 in 20 = ?	10 in 100 = ?

Copy, and multiply:

2 × 20 = ?	2 × 30 = ?	2 × 100 = ?
4 × 20 = ?	3 × 30 = ?	3 × 100 = ?
5 × 20 = ?	2 × 40 = ?	4 × 100 = ?
3 × 20 = ?	2 × 50 = ?	5 × 100 = ?

Copy, and subtract:

30	50	70	90	80	60	90
− 20	− 20	− 20	− 20	− 30	− 30	− 30
80	60	90	70	90	80	90
− 40	− 40	− 40	− 40	− 60	− 50	− 70

Copy, and add:

30	60	50	20	50	30	60
40	20	40	30	20	30	30
30	40	20	50	70	20	20
50	40	40	50	20	20	80
30	30	40	40	20	20	20
20	70	30	20	50	60	70
80	50	30	70	60	40	40
20	30	60	30	40	50	60

Lesson 26.

Two ten-cent pieces and a cent are how much money?

Two ten-cent pieces and a two-cent piece are how much money?

Two ten-cent pieces and a three-cent piece are how much money?

Two ten-cent pieces and two two-cent pieces are how much money?

Two ten-cent pieces and a five-cent piece are how much money?

How many cents are twenty cents and two three-cent pieces? twenty cents and three two-cent pieces? twenty cents and a five-cent piece and a two-cent piece? twenty cents, a five-cent piece, and a three-cent piece? twenty cents and three three-cent pieces?

Write the sum in figures:

Twenty and one.	Forty and four.
Twenty and six.	Forty and six.
Thirty and one.	Forty and nine.
Thirty and eight.	Sixty and one.
Fifty and one.	Sixty and two.
Fifty and five.	Sixty and six.

Read:

21	51	81	22	36	73	84	67
31	61	91	42	56	76	88	97
41	71	101	82	76	79	89	77

CHAPTER V.

NUMBERS FROM TWENTY TO FIFTY.

Lesson 1.

20. TWENTY. XX.

There are twenty pencils on my desk; half are lead-pencils, and half are slate-pencils. How many pencils of each kind are on the desk?

Nellie's brother is twenty years old; she is half as old. How old is Nellie?

How many fives in ten? How many fives in two tens? How many fives in twenty, then?

Twenty school days are how many school weeks?

Four gloves have how many fingers?

A dog has how many toes?

Four pansy-blossoms have how many petals?

What four equal numbers make twenty?

What part of twenty is each of these numbers?

What is one-fourth of twenty?

I had twenty quires of paper in four equal packages. How many quires were in each package?

A little girl who had two dimes spent a fourth of her money for fancy crackers. How much money did she spend?

Count by fives to twenty.

Lesson 2.

How many fours in 16? How many more fours in 20? How many fours in 20?

Twenty horse-shoes will shoe how many horses?

Twenty quarts are how many gallons?

Twenty gills are how many pints?

Give a problem about five gallons of syrup which were put into quart bottles, and tell how many bottles were used for the syrup.

How many wheels have five wagons?

Five gallons are how many quarts?

Five pints are how many gills?

Count by fours to twenty.

How many twos in ten? How many twos in two tens? How many twos in twenty, then?

If you have 20 cents in two-cent pieces, how many two-cent pieces have you?

Twenty half-dollars make how many dollars?

Twenty slate-pencils will cost how much, if two can be bought for a cent?

How many dozen buttons, at two cents a dozen, can be bought for 20 cents?

Give a problem about ten marbles each of which cost two cents, and tell how much all cost.

How much does it cost to send ten letters, if it costs two cents for each letter?

Ten quarts are how many pints?

Count by twos to twenty.

Lesson 3.

Copy, and complete:

10)20	6)18	4)16	5)15	10)50
5)20	3)18	2)16	10)80	10)70
9)18	8)16	4)12	10)40	10)60

½ of 20 = ?	⅓ of 12 = ?	8 × 2 = ?
¼ of 20 = ?	½ of 12 = ?	4 × 4 = ?
½ of 18 = ?	⅛ of 6 = ?	2 × 8 = ?
⅓ of 18 = ?	⅓ of 9 = ?	4 × 3 = ?
⅙ of 18 = ?	⅛ of 8 = ?	3 × 5 = ?
½ of 16 = ?	½ of 8 = ?	3 × 4 = ?
¼ of 16 = ?	2 × 10 = ?	5 × 4 = ?
⅛ of 16 = ?	4 × 5 = ?	9 × 2 = ?
⅓ of 12 = ?	2 × 9 = ?	5 × 3 = ?
⅓ of 15 = ?	3 × 6 = ?	3 × 3 = ?
¼ of 12 = ?	6 × 3 = ?	2 × 7 = ?

Tell the sum instantly:

9	7	5	4	7	6	7	6	9	8	9	4
8	6	8	9	3	5	4	7	6	7	5	7
9	8	7	6	5	9	8	8	7	6	6	8
2	3	5	4	9	3	4	6	8	9	7	5
7	8	6	9	7	8	9	7	9	7	8	6
9	2	4	8	6	7	7	5	8	6	7	9

Lesson 4.

21. TWENTY-ONE. XXI.

How many threes in eighteen? How many more threes in twenty-one? How many threes, then, in twenty-one?

How many yards in 21 feet of rope?

How many three-inch squares can you cut out from a rectangle 21 inches long and 3 inches wide?

In seven yards of rope how many feet of rope?

Seven triangles have how many sides?

If the newsboy sells seven papers at three cents each, how many cents does he receive?

How many sevens make fourteen?

Fourteen and seven are how many?

How many sevens, then, make twenty-one?

If berries are seven cents a quart, how many quarts can be bought for twenty-one cents?

In twenty-one days how many weeks?

What three equal numbers make twenty-one?

What, then, is one-third of twenty-one?

If a bicycle will travel twenty-one miles in three hours, at what rate is that per hour?

In three weeks how many days?

If there are three groups of stars, and seven stars in each group, how many stars are there in the three groups?

Three pairs of horses at seven hundred dollars a pair will cost how many hundred dollars?

Lesson 5.

REVIEW.

If you buy a dozen and a quarter of a dozen of apples at the rate of five for three cents, how much will the apples cost?

Name a number made up of ten and four; of ten and eight; of ten and two; of ten and seven; of four tens and seven; of six tens and six; of seven tens and nine; of nine tens and two; of eight tens and five; of five tens and eight; of three tens and nine; of two tens and one; of ten and six.

If I walk a fourth of a mile to school, and you walk three times as far, what part of a mile do you walk to school?

If you have one-third of a yard of cloth, and I have twice as much, how much cloth have I?

If it takes a sixth of a yard of ribbon to make a loop, how much ribbon will it take for four loops?

If you have one-eighth of a dollar, and I have eight times as much, how much money have I?

How many two-cent cakes can you buy for five cents, and how many cents will you have left? for seven cents? for nine cents? for seventeen cents? for nineteen cents? for twenty-one cents?

How many three-cent pencils can you buy for five cents, and how much will you have left? for eight cents? for eleven cents? for sixteen cents?

Lesson 6.

24. TWENTY-FOUR. XXIV.

If you have seven three-cent pieces, how much money have you? If you earn another three-cent piece, how much money will you have? Eight three-cent pieces, then, are how much money?

Draw a picture to show that 8 rows of buttons, with 3 in each row, will be 24 buttons.

If you put 4 buttons in each row, how many rows will you have for 24 buttons? If you put 6 in each row, how many rows will you have? If you put 8 in each row, how many rows will you have? In what other full rows can you put 24 buttons?

If twenty-four oranges were put into two fruit dishes, with the same number in each dish, how many oranges would there be in each dish?

If these same oranges were put into three dishes, with the same number in each dish, how many would there be in each dish?

If two dozen eggs are packed in four equal layers, how many eggs are in each layer?

The cook used 24 eggs for six loaves of cake. How many eggs did she use for each loaf?

A man bought eight chairs for 24 dollars. What was the price of each chair?

Count by twos to twenty-four.

Count by threes to twenty-four.

Count by sixes to twenty-four.

Lesson 7.

Copy, and divide:

3)24	8)24	4)24	6)24	2)24
3)21	7)21	4)20	5)20	2)20

½ of 24 = ?	⅓ of 24 = ?	½ of 20 = ?
¼ of 24 = ?	⅙ of 24 = ?	¼ of 20 = ?
⅛ of 24 = ?	⅓ of 21 = ?	⅛ of 18 = ?
⅛ of 16 = ?	⅓ of 18 = ?	⅙ of 18 = ?

Copy, and multiply:

3	4	6	8	12	11	7	3	4	10
8	6	4	3	2	2	3	7	5	2

Tell the sum instantly:

8	9	10	6	7	9	8	5	7	8
7	6	5	9	8	5	6	9	6	7
6	10	9	8	7	4	5	6	7	5
8	4	4	5	6	9	8	7	5	6

Tell the difference instantly:

10	20	10	20	10	20	11	21	11	21
−4	−4	−5	−5	−2	−2	−7	−7	−3	−3
8	18	8	18	18	8	18	17	17	17
−2	−2	−6	−6	−9	−3	−3	−9	−8	−7

Lesson 8.

REVIEW.

Eight clovers have how many leaves?

Eight chestnut burrs contain how many nuts, if there are three nuts in each burr?

Eight yards are how many feet?

Into how many yard-sticks can a stick 24 feet long be cut?

There are twenty-four hours in a day. How many hours is one-eighth of the day?

What is the greatest number of squares that you can make from 24 sticks?

How many squares with a triangle on top of each square can you make with 24 sticks?

How many separate triangles and squares can you make from 24 sticks?

Three squares and four triangles have how many sides altogether?

Six gallons of oysters are how many quarts?

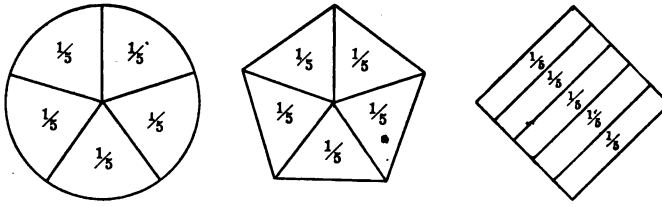
Six pints of yeast are how many gills?

A man who owned 24 acres of land, planted one-sixth of it with potatoes. How many acres of potatoes did he plant?

There are 24 hours in a day. How many hours in a fourth of a day?

There are 24 sheets of paper in a quire. How many sheets in a quarter of a quire? in one-half of a quire?

Lesson 9.



Into how many equal parts is the circle divided?

What part of the whole circle is each of the equal parts into which it is divided?

Show *one-fifth* of the circle.

Into what is the pentagon divided?

Show one-fifth of the pentagon.

What part of the whole square is each of the equal parts into which it is divided?

Draw a line and divide it into fifths.

Divide a triangle into fifths by drawing lines from the vertex to the base.

What number can you divide into fifths and have *one* for each fifth?

What number has *two* for each fifth?

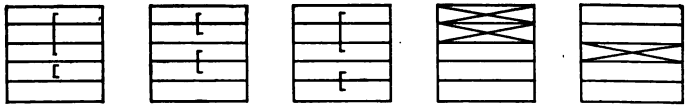
What number has *three* for each fifth?

What is one-fifth of twenty?

If a boy gives you a two-cent piece and tells you that it is one-fifth of all the money he has, how much money has he?

If a three-cent piece is one-fifth of your money, how much money have you?

Lesson 10.



Find the answers to these questions, by studying the squares:

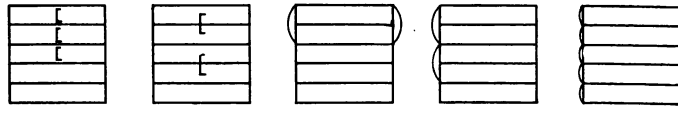
$\frac{3}{5}$ and $\frac{1}{5} = ?$ $\quad\quad$ $\frac{5}{5} - \frac{2}{5} = ?$

$\frac{2}{5}$ and $\frac{2}{5} = ?$ $\quad\quad$ $\frac{3}{5} - \frac{1}{5} = ?$

$\frac{3}{5}$ and $\frac{2}{5} = ?$ $\quad\quad$ $1 - \frac{1}{5} = ?$

Draw squares, and show the answers:

$\frac{1}{5} + \frac{1}{5} = ?$	$\frac{3}{5} + \frac{2}{5} = ?$	$\frac{2}{5} - \frac{1}{5} = ?$
$\frac{2}{5} + \frac{1}{5} = ?$	$\frac{2}{5} + \frac{2}{5} = ?$	$1 - \frac{1}{5} = ?$
$\frac{3}{5} + \frac{1}{5} = ?$	$\frac{4}{5} - \frac{1}{5} = ?$	$1 - \frac{3}{5} = ?$
$\frac{4}{5} + \frac{1}{5} = ?$	$\frac{3}{5} - \frac{1}{5} = ?$	$1 - \frac{4}{5} = ?$



The squares will show the answers to these questions:

$3 \times \frac{1}{5} = ?$	$\frac{1}{2}$ of $\frac{4}{5} = ?$	$\frac{1}{5}$ in $1 = ?$
$2 \times \frac{2}{5} = ?$	$\frac{2}{5}$ in $\frac{4}{5} = ?$	$\frac{2}{5}$ in $1 = ?$

Draw squares, and find the answers:

$\frac{1}{2}$ of $\frac{2}{5} = ?$	$\frac{1}{4}$ of $\frac{4}{5} = ?$	$\frac{1}{5}$ in $\frac{3}{5} = ?$
$\frac{1}{3}$ of $\frac{3}{5} = ?$	$\frac{1}{5}$ in $\frac{2}{5} = ?$	$\frac{2}{5}$ in $\frac{4}{5} = ?$

Lesson 11.

25. TWENTY-FIVE. XXV.

Twenty and five are how many?

How many fives are twenty?

How many fives are twenty and five?

Make a problem for 5 in 20.

What is one of the five equal numbers that make twenty-five?

What part of twenty-five is five?

If you had a quarter of a dollar and spent one-fifth of your money, how much did you spend?

If you spent two-fifths of a quarter of a dollar, how much did you spend? If you spent three-fifths? If you spent four-fifths?

Make a problem for $\frac{1}{5}$ of 25.

How many five-cent pieces equal 25 cents?

How many school days have five weeks?

Five pentagons have how many sides?

Make a problem for 5×5.

Copy, and complete:

$5 \times 5 = ?$	$\frac{1}{5} + \frac{1}{5} = \frac{}{5}$.	$1 - \frac{1}{5} = \frac{}{5}$.
5 in $25 = ?$	$\frac{1}{5} + \frac{2}{5} = \frac{}{5}$.	$1 - \frac{2}{5} = \frac{}{5}$.
$\frac{1}{5}$ of $25 = ?$	$\frac{1}{5} + \frac{3}{5} = \frac{}{5}$.	$1 - \frac{3}{5} = \frac{}{5}$.
$\frac{1}{5}$ of $20 = ?$	$\frac{1}{5} + \frac{4}{5} =$	$1 - \frac{4}{5} = \frac{}{5}$.
$\frac{1}{5}$ of $15 = ?$	$\frac{2}{5} + \frac{2}{5} = \frac{}{5}$.	$\frac{2}{5} - \frac{1}{5} = \frac{}{5}$.
$\frac{1}{5}$ of $10 = ?$	$\frac{2}{5} + \frac{3}{5} =$	$\frac{3}{5} - \frac{1}{5} = \frac{}{5}$.
$\frac{1}{5}$ of $5 = ?$	$\frac{3}{5} + \frac{1}{5} = \frac{}{5}$.	$\frac{3}{5} - \frac{2}{5} = \frac{}{5}$.

Lesson 12.

REVIEW.

How many pints in a quart? in four quarts? in eight quarts? in ten quarts? in eleven quarts? in twelve quarts?

Eleven two-cent pieces of money are how much?

Twelve two-cent stamps cost how much?

How many gills make a pint? make two pints? make four pints? make five pints? make six pints?

How many quarts make a gallon? make three gallons? make five gallons? make six gallons?

How many things make a dozen? a dozen and a half? two dozen? a dozen and a quarter?

How many months make a year? two years? a year and a half? a year and a third? two-thirds of a year? three-fourths of a year?

How many sheets of paper make a quire of paper? make half a quire of paper?

How many hours make a day? half a day?

How many inches make a foot? a foot and a half? a third of a foot? two-thirds of a foot?

Two cubes have how many edges?

Three cubes have how many corners?

Write:

4 gills = 1 pint.
2 pints = 1 quart.
4 quarts = 1 gallon.

Write the table of twos, beginning Once 2 is 2.

Lesson 13.

27. TWENTY-SEVEN. XXVII.

How many threes in twenty-four?

How many more threes in twenty-seven?

How many threes, then, in twenty-seven?

Draw a line and call it twenty-seven feet of rope. How many yards of rope in your line?

There are three months in each of our seasons. How many seasons in twenty-seven months?

Make a problem for 3 in 27.

Nine triangles have how many corners?

Nine yards of chain are how many feet?

Make a problem for 9×3.

Count by threes to twenty-seven.

Tell the sum instantly:

7	8	9	8	9	7	5	9	6	9
5	7	6	6	5	8	9	4	9	8
12	15	18	21	24	12	16	20	15	20
3	3	3	3	3	4	4	4	5	5

Tell the difference instantly:

27	24	21	18	15	12	24	20
−3	−3	−3	−3	−3	−3	−4	−4

Copy, and complete:

$3 \times 9 = ?$	$4 \times 6 = ?$	$8 \times 3 = ?$	3 in 24 = ?
3 in 27 = ?	$6 \times 4 = ?$	$2 \times 12 = ?$	4 in 24 = ?
$27 - 3 = ?$	$3 \times 8 = ?$	$12 \times 2 = ?$	6 in 24 = ?

Lesson 14.

If you take two from twenty to put with seven, what two numbers have you?

What do eighteen and nine make?

How many nines in eighteen? How many more nines in twenty-seven?

Make a problem for 9 in 27.

Twenty-seven panes of glass will supply how many windows, if it takes nine panes for each window?

Three rows of nine dots each are how many dots?

Three rows of desks, with nine in each row, are how many desks?

Make a problem for 3×9.

Count by nines to twenty-seven.

What three equal numbers make twenty-seven?

What is one-third of twenty-seven?

If three bunches of fire-crackers cost twenty-seven cents, what does one bunch cost?

Make a problem for $\frac{1}{3}$ of 27.

Make a problem for:

3 in 27. 9×3. 3 in 24. 8×3.

Copy, and complete:

3 in 27 = ?	6 in 24 = ?	7 in 21 = ?
9 in 27 = ?	8 in 24 = ?	3 in 21 = ?
3 in 24 = ?	12 in 24 = ?	4 in 20 = ?
4 in 24 = ?	2 in 24 = ?	5 in 20 = ?

Lesson 15.

REVIEW.

How many in a half-dozen? in two half-dozen?

Which is more, two half-dozen or one dozen?

How many months in half a year? in two halves of a year?

Which is more, two halves of a year or a whole year?

How many sheets of paper in a quire? in two halves of a quire?

Which is more, two halves or the whole?

How many inches in a third of a foot? in three-thirds of a foot?

How many eggs in a third of a dozen? in three-thirds of a dozen?

Which is more, three-thirds or the whole?

How many inches in one-fourth of a foot? in four-fourths of a foot?

How many months in one-fourth of a year? in four-fourths of a year?

Which is more, four-fourths or the whole?

How many fourths make the whole?

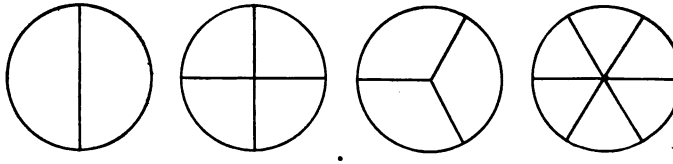
How many hours in one-eighth of a day? in eight-eighths of a day?

How many eighths make the whole?

How many sheets of paper in one-sixth of a quire? in six-sixths of a quire?

How many sixths make the whole?

Lesson 16.



Which is more, a half or a fourth of the same circle? a third or a sixth of the same circle?

Which is most, a half, a fourth, a third, or a sixth of the same circle?

Which is more, a half or a third? a half or a sixth? a fourth or a third? a fourth or a sixth?

Copy the above circles.

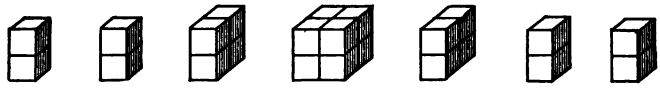
Call each circle twelve, and write in each division the number that is such a part of twelve as the division is of the circle.

Which is most, one-half, one-third, one-fourth, or one-sixth of twelve? Which is least, one-half, one-third, one-fourth, or one-sixth of twelve?

Call each circle twenty-four, and write in each division the number that is such a part of twenty-four as the division is of the circle.

Which is most, one-half, one-third, one-fourth, or one-sixth of twenty-four? Which is least, one-half, one-third, one-fourth, or one-sixth of twenty-four? Which is more, one-third or one-sixth of twenty-four? One-half or one-fourth of twenty-four?

Lesson 17.



How many small cubes make up the large cube? make up one-half of the large cube? make up one-fourth of the large cube?

How many fourths are in half of the cube?

How many fourths of an apple does it take to equal one-half of an apple?

One-half of a dollar equals how many fourths of a dollar? One-half of a day equals how many fourths of a day?

Write: One-half equals two-fourths.

Copy, and give the answers:

$\frac{1}{4} + \frac{1}{4} = \frac{?}{2}$.	$\frac{3}{4} - \frac{1}{4} = \frac{?}{2}$.	$1 - \frac{1}{2} = \frac{?}{2}$.	$\frac{3}{8} + \frac{1}{8} = ?$
$\frac{1}{2} - \frac{1}{4} = \frac{?}{4}$.	$\frac{2}{4} + \frac{1}{4} = ?$	$1 - \frac{3}{8} = \frac{?}{2}$.	$\frac{3}{4} + \frac{1}{4} = ?$
$\frac{1}{2} + \frac{1}{4} = \frac{?}{4}$.	$1 - \frac{1}{4} = \frac{?}{4}$.	$1 - \frac{4}{8} = \frac{?}{2}$.	$\frac{5}{6} + \frac{1}{6} = ?$
$\frac{3}{4} - \frac{1}{2} = \frac{?}{4}$.	$1 - \frac{3}{4} = \frac{?}{4}$.	$1 - \frac{3}{8} = \frac{?}{8}$.	$\frac{7}{8} + \frac{1}{8} = ?$

How many small cubes are in one-eighth of the large cube?

How many eighths of the cube are in one-half of the cube?

One-half of a pie equals how many eighths of the pie? One-half of a dollar equals how many eighths of a dollar?

Write: One-half equals four-eighths.

Lesson 18.

28. TWENTY-EIGHT. XXVIII.

How many fours in twenty-four? How many more fours in twenty-eight?

How many fours in twenty-eight?

In twenty-eight weeks how many full moons, if there is a full moon every four weeks?

How many separate squares can be formed from twenty-eight sticks?

Make a problem for 4 in 28.

Seven squares have how many sides?

Seven horses will wear how many shoes?

How many brass balls will be required for seven yokes of oxen, if every ox has a ball on each horn?

Make a problem for 7×4.

Count by fours to twenty-eight.

How many sevens in twenty-one?

Twenty-one and seven more are how many?

How many sevens in twenty-eight?

If there are twenty-eight days in February, how many Saturdays occur in February?

Make a problem for 7 in 28.

In four weeks how many days?

Make a problem for 4×7.

Count by sevens to twenty-eight.

What four equal numbers make twenty-eight?

What part of twenty-eight is seven?

Make a problem for $\frac{1}{4}$ of 28.

Lesson 19.

Count by twos to twenty-eight.
Count by threes to twenty-seven.
Count by fours to twenty-eight.
Count by fives to twenty-five.
Count by sixes to twenty-four.
Count by sevens to twenty-eight.
Count by eights to twenty-four.
Count by nines to twenty-seven.
Count by tens to one hundred.

How many dozen bananas and what part of a dozen are in a bunch of twenty-eight bananas?

How many quarts of jelly and what part of a quart have I in twenty-eight gills?

Think of the sum instantly:

8	9	10	6	7	6	9	9	10	7	10
7	6	5	9	8	8	5	7	6	9	9
8	4	8	8	6	9	7	6	5	7	4
5	7	9	7	9	7	4	7	9	8	8

Add by couples of numbers:

5 3 } 8	4 3 } 7	3 6 }	3 5 }	3 4 }	7 3 }	4 2 }
4 2 } 6	2 6 } 8	2 7 }	6 2 }	2 5 }	8 2 }	3 4 }
5 2 } 7	3 2 } 5	4 5 }	4 4 }	6 4 }	4 6 }	3 5 }

Lesson 20.

How many yards and how many feet besides are in twenty-eight feet of rope?

Twenty-eight cents will buy:

How many two-cent postage stamps?

How many three-cent pencils, and how many cents will remain?

How many yards of cord at four cents a yard?

How many dozen peaches at five cents a dozen, and how many cents will remain?

How many quires of paper at six cents a quire, and how many cents will remain?

How many cakes of sugar at seven cents a cake?

How many quarts of blueberries at eight cents a quart, and how many cents will remain?

How many pounds of crackers at nine cents a pound, and how many cents will remain?

How many loaves of bread at ten cents a loaf, and how many cents will remain?

How many dozen pens at eleven cents a dozen, and how many cents will remain?

Which is the larger part, a half of an apple or a third of the same apple? A half of a stick of candy or a fourth of the same stick of candy?

Into how many parts will you divide anything to divide it into halves? to divide it into thirds? to divide it into fourths? to divide it into fifths? into sixths? into eighths?

Lesson 21.

30. THIRTY. XXX.

Three tens are how many?
In each ten how many fives?
In three tens how many fives?
In thirty school days how many school weeks?
Make problems for 5 in 30.
What six equal numbers make thirty?
What piece of money is one-sixth of thirty cents?
Make problems for $\frac{1}{6}$ of 30.
Six pentagons have how many sides?
Three pairs of gloves have how many fingers?
Make problems for 6×5.
Count by five to thirty.
How many sixes in twenty-four?
Twenty-four and six make what number?
How many sixes in thirty?
How many cubes will thirty equal squares form if you sew six squares together to form each cube?
Thirty days are how many working weeks?
Make problems for 6 in 30.
What five equal numbers make thirty?
What is one-fifth of thirty?
What two equal pieces of money make one-fifth of thirty?
How many working days in five weeks?
Count by sixes to thirty.

Lesson 22.

Draw a square. Show one-fifth of it; three-fifths; two-fifths.

Draw another square. Show one-sixth of it; one-third.

In one-third of a square how many sixths?

Show two-thirds of the square. In two-thirds how many sixths?

Show one-half of the square. In one-half of a square how many sixths?

Draw a square and show one-seventh of it; two-sevenths; five-sevenths; six-sevenths.

How many sevenths make the whole square?

Draw a square and show one-eighth of it; one-fourth.

In one-fourth how many eighths?

Show three-fourths of the square. In three-fourths how many eighths?

Show one-half of the square. In one-half how many eighths? In one-half how many fourths?

How many eighths make the whole square?

Show by drawings, and find the answer:

$\frac{1}{2} = \frac{}{8}$.	$\frac{1}{2} + \frac{1}{8} = \frac{}{8}$.	$\frac{1}{2} - \frac{1}{8} = \frac{}{8}$.
$\frac{1}{2} = \frac{}{4}$.	$\frac{1}{2} + \frac{1}{4} = \frac{}{4}$.	$\frac{1}{2} - \frac{1}{4} = \frac{}{4}$.
$\frac{1}{2} = \frac{}{6}$.	$\frac{1}{2} + \frac{1}{6} = \frac{}{6}$.	$\frac{1}{2} - \frac{1}{6} = \frac{}{6}$.
$\frac{1}{4} = \frac{}{8}$.	$\frac{1}{4} + \frac{1}{8} = \frac{}{8}$.	$\frac{1}{4} - \frac{1}{8} = \frac{}{8}$.
$\frac{1}{3} = \frac{}{6}$.	$\frac{1}{3} + \frac{1}{6} = \frac{}{6}$.	$\frac{1}{6} - \frac{1}{6} = \frac{}{6}$.
$\frac{2}{3} = \frac{}{6}$.	$\frac{2}{3} + \frac{1}{6} = \frac{}{6}$.	$\frac{2}{3} - \frac{1}{6} = \frac{}{6}$.

Lesson 23.

REVIEW.

In a caravan there were four rows of camels and five camels in each row. How many camels were there in the caravan?

Count by fives as far as you can.

How many fives make twenty-five? make fifteen? make thirty? make twenty?

Count by threes to thirty.

How many threes make twelve? eighteen? twenty-four? fifteen? twenty-one?

Write the table of three, beginning, Once 3 = 3.

In twenty-four weeks how many new moons, if there is a new moon every four weeks?

I have twenty-eight quarters of a dollar. How many dollars have I?

Five fours are how many? three fours? six fours? seven fours? four fours?

Count by fours to twenty-eight.

How many faces have four cubes?

Count by sixes to thirty.

In twenty-eight days how many weeks?

Nine inches are a quarter of a yard. A half-yard is how many inches? Three-quarters of a yard are how many inches?

Count by tens to one hundred.

Two dozen eggs are how many eggs?

Two feet are how many inches?

Lesson 24.

Name the lowest coin in United States money.
Name other coins in their order, to one dollar.
How many cents equal a dime ?
How many cents equal a dollar ?
How many cents equal a half of a dollar ?
One dollar is written $1.
Read : $6 ; $8 ; $5; $75; $100; $60; $30; $99.

Lesson 25.

When dollars and cents are expressed, the cents are written at the right of the dollars, with a dot between the dollars and cents, thus:

One dollar and twenty-five cents, $1.25.

Five dollars and forty-two cents, $5.42.

Three dollars and ten cents, $3.10.

Four dollars and five cents, $4.05.

Twenty dollars and two cents, $20.02.

Read: $3.50; $7.75; $9.27; $1.34; $2.20; $0.34; $0.20; $0.35; $0.12; $0.05; $0.01; $0.02.

Express:

Three dollars and twenty-six cents.

Eight dollars and sixty cents.

Twelve dollars and a half.

Sixteen dollars and a quarter.

Thirty dollars and ten cents.

Three dollars and five cents.

Five dollars and three cents.

Twenty dollars and two cents.

Forty dollars and four cents.

Seventy dollars and seven cents.

One hundred dollars and one cent.

Find the sum:

$3.02	$7.33	$40.04	$14.14	$10.10
4.03	6.22	20.02	12.12	16.23
3.01	3.12	70.01	10.10	12.12
5.02	5.11	80.02	11.11	10.51

Lesson 26.

Copy, and find how many. Add the single cents first, then the dimes, and then the dollars.

$1.04	$4.23	$32.21	$43.02
$4.11	$2.01	$43.46	$34.25
$2.10	$5.30	$21.20	$42.01
$5.42	$7.25	$60.01	$30.40
$2.03	$6.54	$25.27	$75.25
$3.45	$7.21	$60.01	$34.30
$7.21	$3.10	$40.30	$70.02

Copy, and find the difference:

$8.54	$9.87	$87.96	$78.78
— 3.32	— 5.54	— 35.30	— 36.00
$9.78	$7.99	$99.68	$79.99
— 4.03	— 2.70	— 47.35	— 50.07

Copy, and complete:

$17 = 10 + ?$	$24 = 2 \times 10 + ?$	$40 = 10 \times ?$
$13 = 10 + ?$	$25 = 2 \times 10 + ?$	$50 = 10 \times ?$
$15 = 10 + ?$	$29 = 2 \times 10 + ?$	$30 = 10 \times ?$
$19 = 10 + ?$	$28 = 2 \times 10 + ?$	$60 = 10 \times ?$
$14 = 10 + ?$	$36 = 3 \times 10 + ?$	$70 = 10 \times ?$
$16 = 10 + ?$	$34 = 3 \times 10 + ?$	$90 = 10 \times ?$
$18 = 10 + ?$	$33 = 3 \times 10 + ?$	$80 = 10 \times ?$
$12 = 10 + ?$	$40 = 4 \times 10 + ?$	$20 = 10 \times ?$
$11 = 10 + ?$	$47 = 4 \times 10 + ?$	$100 = 10 \times ?$
$20 = 10 + ?$	$55 = 5 \times 10 + ?$	$10 = 10 \times ?$

Lesson 27.

THE PECK.

These measures are used in measuring nuts, oats, beans, potatoes, and other *dry* articles that are bought and sold by measure.

Name the articles that you have seen measured in such measures.

What is the smallest measure called?

What is the next larger measure called?

What is the largest measure called?

If this peck measure was full of oats, and you took out a quart of oats each time, you would fill your quart measure *eight* times.

If the peck measure was empty, how many quarts of oats could you put into the measure?

If the peck measure was half-full of berries, how many more quarts of berries would it hold?

If the peck measure was a quarter full, how many more quarts would it hold? If it was three-quarters full, how many more quarts would it hold?

If the peck measure was full of oats, and four quarts were taken out, how many quarts would be left in the measure?

Lesson 28.

32. THIRTY-TWO. XXXII.

How many fours in twenty-eight?

Twenty-eight and four are how many?

How many fours in thirty-two?

Express the operation and find the answer:

Thirty-two quarts will fill how many four-quart measures?

Thirty-two shoes will shoe how many horses?

Eight gallons are how many quarts?

Eight squares have how many sides? ($8 \times 4 = 32$.)

How large round is a ball if thirty-two inches of string will go around it eight times? ($\frac{1}{8}$ of $32 = 4$.)

A boy packing eggs used eight boxes for thirty-two eggs. How many eggs did he put in a box?

There are two dozen and eight pens in a box. How many pens are in the box?

Thirty-two quarts are how many pecks?

Thirty-two ox-shoes will shoe how many oxen?

Four pies, each cut into eighths, will make how many pieces?

Four cubes have how many corners?

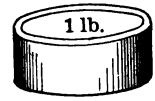
In a quart there are eight gills. How many gills in a gallon?

In a bushel there are thirty-two quarts. How many quarts in one-fourth of a bushel?

How large round is a wheel that goes over thirty-two feet in turning round four times?

Lesson 29.

OUNCES IN A POUND.



What is the smallest of these weights called?

What is the largest weight called?

It takes sixteen ounces to balance the pound weight.

How many ounces will it take to balance a half-pound weight?

How many ounces will it take to balance a quarter of a pound? an eighth of a pound?

If I bought a fourth of a pound of tea, how many ounces of tea did I buy?

If you bought half a pound of cheese, how many ounces of cheese did you buy?

I ordered a pound of steak, but the piece brought me weighed a pound and a quarter. How many ounces did it weigh?

I bought a pound and a half of dates. How many ounces did the dates weigh?

I bought two pounds of chocolate. How many ounces did I buy?

What will a pound of gum-arabic cost at two cents an ounce?

Copy: 16 ounces make 1 pound.

Lesson 30.

35. THIRTY-FIVE. XXXV.

How many fives make thirty?

Thirty and five are how many?

How many fives make thirty-five?

Make problems for 5 in 35.

Thirty-five ounces of liquid will fill how many five-ounce bottles?

Thirty-five cents are how many five-cent pieces?

Seven pentagons have how many sides?

Make problems for 7×5.

If you have thirty-five cents in seven equal pieces of money, what is each piece?

Make problems for $\frac{1}{7}$ of 35.

Twenty-eight and seven are how many?

How many sevens in twenty-eight?

How many sevens in thirty-five?

In thirty-five days how many weeks?

If I pay thirty-five dollars for five weeks' board, what do I pay by the week?

Make problems for 7 in 35.

Five horse-chestnut leaves have how many leaflets, if each has seven?

What is one-fifth of thirty-five?

Count by sevens to thirty-five.

Count by fives to thirty-five.

Which is more, one-fifth or one-seventh of thirty-five?

Lesson 31.

Make change for twenty-five cents with each of these numbers: 20 cents; 15 cents; 10 cents; 5 cents; 18 cents; 7 cents; 16 cents; 9 cents.

Name the number of tens and the number of ones in each of these numbers:

15	17	12	10	20	18	11	13	25	21
30	35	33	31	40	50	68	76	84	90

Add by couples of numbers:

3	7	5	4	2	6	3	4	7	5	3
5	2	4	3	7	2	6	4	3	4	3
7	3	6	2	9	7	3	3	2	6	4
3	6	4	5	1	2	5	3	8	3	2
6	2	7	3	7	8	3	5	6	7	5
2	8	2	3	2	2	4	5	4	2	1
5	1	7	4	5	5	3	2	5	8	2
4	7	3	4	2	2	2	2	5	1	4

Copy, and add:

lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.
7	3	5	2	6	3	7	2	9	5	6	5
6	4	9	4	5	2	5	0	3	4	4	3
4	5	6	3	7	4	6	7	7	3	7	4
5	2	8	6	8	3	3	9	2	6	3	7

Copy, and find the difference:

lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.
7	9	18	12	21	11	24	10	32	15
−3	4	−9	6	−7	6	−8	7	−8	5

Lesson 32.

REVIEW.

Draw two squares each three inches on a side. Divide one square into fourths and the other into fifths, by drawing lines from top to bottom. Which is the greater, one-fourth or one-fifth?

Which is more, one-fourth of an apple or one-fifth of the same apple?

Write the table of Liquid Measure.

Write the table of twos.

Write the table of threes.

Two pounds are how many ounces?

One pound and a half are how many ounces?

One pound and a quarter are how many ounces?

One pound and an eighth are how many ounces?

Four ounces is what part of a pound? Two ounces is what part of a pound?

Four pecks are how many quarts?

Twenty-eight quarts of berries will sell for how much at one dollar per peck?

Twenty-four quarts of potatoes will sell for how much at a quarter of a dollar a peck?

One peck and four quarts of strawberries will sell for how much at one dollar per peck?

Two score years are how many years?

If you live to be four score years and ten, how old will you be?

Three score years and ten are how many years?

Lesson 33.

36. THIRTY-SIX. XXXVI.

How many fours in thirty-two?

Thirty-two and four are how many?

How many fours in thirty-six?

How many squares can you form with thirty-six sticks?

Make problems for 4 in 36.

What nine equal numbers make thirty-six?

What part of thirty-six is four?

If I can buy nine dozen clothes-pins for thirty-six cents, what are they worth a dozen?

Make problems for $\frac{1}{9}$ of 36.

Nine squares have how many sides?

Nine rectangles have how many sides?

Make problems for 9×4.

Count by fours to thirty-six.

How many sixes in thirty?

How many sixes in thirty-six?

Thirty-six squares will make how many Roman crosses if it takes six for each cross?

Make problems for 6 in 36.

What six equal numbers make thirty-six?

What is one-sixth of thirty-six?

With thirty-six eggs the cook can make six loaves of sponge cake. How many eggs does each loaf require?

Count by sixes to thirty-six.

Lesson 34.

How many nines make twenty-seven?

Twenty-seven and nine are how many?

How many nines make thirty-six?

I had a thirty-six inch rod which I could fold into parts each nine inches long. Into how many parts could I fold my rod?

Make problems for $9\overline{)36}$

What four equal numbers make thirty-six?

What is one-fourth of thirty-six?

Thirty-six pounds of starch were put into four equal packages. How many pounds were in each package?

Make problems for $\frac{1}{4}$ of 36.

There are nine inches in a quarter of a yard. How many inches make a yard?

How many inches make a half-yard?

Count by nines to thirty-six.

Count by sixes to thirty-six.

Count by fours to thirty-six.

Count by threes to thirty-six.

Count by twos to thirty-six.

How many triangles can you make with thirty-six sticks?

How many dozen eggs are thirty-six eggs?

Three cubes have how many edges?

A dozen triangles have how many sides?

Count by twelves to thirty-six.

Lesson 35.

Illustrate and find the answer:

We have a flight of twenty steps. Each step is twelve inches broad and six inches high. How many yards of carpeting will it take to carpet the stairs?

How many plants, a foot apart, can be set in two borders, each five yards long?

If in a winter's day it is light from half-past seven until half-past four, how many hours is it from daylight to dark?

Eddie had a ten-cent piece, three five-cent pieces, a three-cent, and a two-cent piece. He bought a kite for ten cents, and three oranges at five cents apiece. How many cents had he left?

If a sheet of paper is doubled four times, how many leaves are made?

A boy sold lilies at the rate of five for two cents. What did he get for thirty lilies?

I have half a dollar, and John has a quarter. What part of a dollar have we together?

It will take a fourth of a yard of velvet to face my hat, an eighth of a yard to bind it, and a half of a yard for bows. How much velvet do I need for the hat?

It takes a quarter of a yard of satin to make a bag, and an eighth of a yard to face it. How much satin will it take in all?

Lesson 36.

40. FORTY. XL.

How many fours make thirty-six?

Thirty-six and four are how many?

What is the greatest number of separate squares that you can form from forty sticks?

If but one square is formed using forty sticks, how many sticks are used for each side?

Give a problem for $4)\overline{40}$

A turtle has four legs. How many legs have ten turtles?

Give a problem for $\frac{1}{10}$ of 40.

How many fives make thirty-five?

Thirty-five and five are how many?

How many five-cent pieces equal forty cents?

Eight pentagons have how many sides?

Eight pansies have how many petals?

What is one-eighth of forty?

Make a problem for $\frac{1}{8}$ of forty.

How many eights make thirty-two?

Thirty-two and eight are how many?

In forty quarts how many pecks?

If a strip of pencil-wood, forty inches long is cut into five equal pieces, how long is each piece?

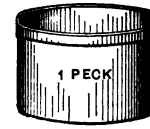
Five cubes have how many corners?

What is one-fifth of forty?

How many circles will it take for the bases of twenty cylinders?

Lesson 37.

THE BUSHEL.



Name articles that are measured in these measures.

What is the smaller measure called?

What is the larger measure called?

It takes *four pecks* to make a bushel.

How many pecks of potatoes are in the bushel measure if it is half full?

If another peck of potatoes is put into the bushel measure, how nearly full will it be?

If the bushel measure is full of wheat, and three pecks of wheat are taken out, how much wheat remains in the basket?

If you sow three-fourths of a bushel of wheat, how many pecks of wheat do you sow?

Six bushels are how many pecks?

Nine bushels are how many pecks?

Eight bushels are how many pecks?

Seven bushels are how many pecks?

Ten bushels are how many pecks?

Lesson 38.

42. FORTY-TWO. XLII.

How many sixes in thirty-six?

Thirty-six and six are how many?

How many sixes in forty-two?

Forty-two quarts of milk will fill how many six-quart cans?

Make a problem for $6\overline{)42}$

What seven equal numbers make forty-two? What is one-seventh of forty-two?

If seven cans will hold forty-two quarts of milk, what will one can hold?

Make a problem for $\frac{1}{7}$ of 42.

How many working days in seven weeks?

Make a problem for 7×6.

How many sevens in thirty-five?

Thirty-five and seven are how many?

How many sevens in forty-two?

In forty-two days there are how many weeks?

Make a problem for $7\overline{)42}$

What six equal numbers make forty-two? What is one-sixth of forty-two?

A little boy earns forty-two cents a week. How much does he earn a day?

Make a problem for $\frac{1}{6}$ of 42.

At seven cents apiece, what will six tops cost?

In six weeks how many days?

Make a problem for 6×7.

Lesson 39.

Copy, and complete:

½ of 36 = ?	½ of 22 = ?	⅓ of 27 = ?
½ of 34 = ?	½ of 20 = ?	⅓ of 24 = ?
½ of 32 = ?	½ of 18 = ?	⅓ of 21 = ?
½ of 30 = ?	½ of 16 = ?	⅓ of 18 = ?
½ of 28 = ?	⅓ of 36 = ?	¼ of 15 = ?
½ of 26 = ?	⅓ of 33 = ?	¼ of 12 = ?
½ of 24 = ?	⅓ of 30 = ?	¼ of 9 = ?

Copy, and complete:

4 gills = ?	2 pints = ?	24 hours = ?
2 pints = ?	8 quarts = ?	7 days = ?
4 quarts = ?	4 pecks = ?	12 months = ?

Copy, and multiply:

4	4	4	4	4	4	4	5	5	5	5	5	5	6
3	7	5	4	6	9	8	6	3	5	7	4	8	3
6	6	6	6	7	7	7	7	8	8	8	8	9	9
6	4	5	7	3	6	5	4	3	5	4	10	3	4

Add by couples of numbers:

5	6	5	2	3	8	2	6	1	2	5	1	2	4
5	6	1	7	2	0	3	2	8	8	6	8	8	3
1	3	4	5	6	5	6	5	6	6	8	3	1	5
9	9	5	4	1	1	1	3	3	4	3	3	1	2
4	4	6	8	6	3	4	8	2	3	4	5	6	7
6	8	6	1	2	7	5	0	7	7	7	7	7	7

Lesson 40.

How many fives in forty?

Forty and five are how many?

Forty and five are how many fives?

Forty-five cents will send how many letters to Europe if each letter requires a five-cent stamp?

What nine equal pieces of money make forty-five cents?

Some little match baskets had five points each. If a bell was hung on each point, how many bells would nine baskets take?

If it takes forty-five pickets for nine gates, how many pickets are required for one gate?

What is one-ninth of forty-five?

Count by fives to forty-five.

Thirty-six and four are how many? five more are how many?

Thirty-six and nine are what number?

A box cover nine inches long and five inches wide contains how many square inches?

I had several strips of paper each a quarter of a yard long. If five of these strips were laid end to end, how many inches long would the whole strip be?

If a man sets out forty-five plants in five equal rows, how many plants are in each row?

Count by nines to forty-five.

What is one-fifth of forty-five?

Lesson 41.

Write the table of fours, beginning: Once 4 is 4.

Write a problem for:

5 in 45.	9 in 45.	$\frac{1}{9}$ of 45.
5 × 9.	9 × 5.	$\frac{1}{5}$ of 45.

Copy:

2 pints = 1 quart.
8 quarts = 1 peck.
4 pecks = 1 bushel.

Copy, and add:

bu.	pks.	qts.	pts.
4	2	5	0
3	0	2	1

bu.	pks.	qts.	pts.
5	3	4	1
4	0	3	0

Copy, and subtract:

bu.	pks.	qts.	pts.
15	3	7	1
7	1	5	0

bu.	pks.	qts.	pts.
17	2	7	0
9	0	4	0

Copy, and divide:

5)45	4)40	12)36	3)30	7)28
9)45	2)40	2)36	10)30	2)28
6)42	20)40	18)36	5)30	14)28
7)42	4)36	4)32	6)30	3)27
5)40	9)36	8)32	2)30	9)27
8)40	6)36	2)32	15)30	3)24
10)40	3)36	16)32	4)28	8)24

Lesson 42.

48. FORTY-EIGHT. XLVIII.

How many sixes in forty-two?

Forty-two and six are how many?

How many sixes in forty-eight?

Forty-eight squares will form how many cubes, if you sew six squares together for each cube?

Eight cubes have how many faces?

I have a piece of paper eight inches long and six inches wide. How many square inches can you mark off on it?

I have a box eight inches long, six inches wide, and one inch high. How many inch cubes can I pack into it?

What is one-eighth of forty-eight?

If there are eight boys and forty-eight cakes, how many cakes can each boy have?

Forty and eight are how many eights?

Forty-eight ox-shoes will shoe how many oxen all round?

Forty-eight quarts are how many pecks?

Six pecks are how many quarts?

Six cubes have how many corners?

What six equal numbers make forty-eight?

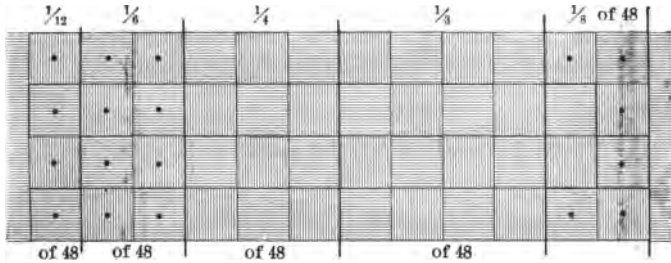
What is one-sixth of forty-eight?

Count by sixes to forty-eight.

Count by eights to forty-eight.

Count by fours to forty-eight.

Lesson 43.



Nellie has worked this tidy in squares. How many squares did she work?

When the tidy was half done, how many squares were worked? when it was one-twelfth done? when it was one-sixth done?

How much longer did it take to work one-sixth than one-twelfth of the tidy?

When the tidy was one-fourth done, how many squares were done? When it was one-eighth done?

How much longer would it take to work one-fourth than one-eighth?

When the tidy was one-third done, how many squares were worked?

How many twelfths of forty-eight do you find in one-sixth? in one-fourth? in one-third?

How many sixths in one-third?

How many eighths in one-fourth?

$\frac{1}{6}$ of 48 =	$\frac{1}{8}$ of 48 =	$\frac{1}{2}$ of 48 + $\frac{1}{4}$ of 48 =
$\frac{1}{12}$ of 48 =	$\frac{1}{4}$ of 48 =	$\frac{1}{6}$ of 48 + $\frac{1}{8}$ of 48 =
$\frac{1}{3}$ of 48 =	$\frac{1}{2}$ of 48 =	$\frac{1}{3}$ of 48 + $\frac{1}{8}$ of 48 =

Lesson 44.

49. FORTY-NINE. XLIX.

Arrange forty-nine tablets in a solid square and tell how many tablets are on a side.

How many rows of seven tablets each are in the square?

If forty-nine plants are set out in the form of a solid square, at equal distances from each other, how many plants are on each side of the square?

How many rows of seven plants each are in the square?

How many plants are around the outside of the square?

If one-seventh of the plants are red, how many are red?

If two-sevenths are white, how many are white?

If the gardener digs up the red and the white plants, how many sevenths of the square are taken away?

How many sevenths remain?

If one-fourth of what remains are purple, how many plants are purple?

If one-third of what is then left are yellow, how many plants are yellow?

How many more plants are in the square?

How far is it around a flower-bed that has seven sides, and each side seven feet long?

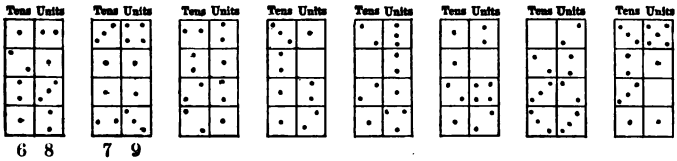
Count by sevens to forty-nine.

CHAPTER VI.

NUMBERS FROM FIFTY TO ONE HUNDRED.

Lesson 1.

ADDITION. CASE I.



Here are some boxes. Each is divided into eight rooms. In the rooms on the right are single cents. In the rooms on the other side are ten-cent pieces. Find the number of single cents and then the number of ten-cent pieces in each box. Write the answers in figures.

Draw these boxes and write figures instead of dots to show the numbers.

Picture the problems below and find the answers:

If I spend 14 cents for sugar, 42 cents for tea, and 32 cents for butter, how much do I spend?

If a boy earns 25 cents one day, 30 another day, and 43 the next day, how much does he earn?

A man bought a file for 35 cents, a hammer for 40 cents, a saw for 62 cents, and some screws for 12 cents. What did he pay for all?

Lesson 2.

A lady bought 2 dozen oranges at 20 cents a dozen, 8 pounds of meal at 4 cents a pound, a dozen lemons at the rate of 3 for 5 cents, and some nuts for 15 cents. How much did she spend?

When Harry went to a picnic, he paid 10 cents for car-fare each way, a quarter of a dollar for fruit, 10 cents for the merry-go-round, and 12 cents for a whistle. How much did he spend?

When Nellie went shopping, she bought 3 spools of silk at 7 cents a spool, 4 yards of cambric at 6 cents a yard, and 7 yards of edging at 6 cents a yard. How much did she pay for all?

If you buy 8 Easter eggs at 5 cents each, 4 sugar rabbits at 3 cents each, and have 23 cents left, how many cents had you at first?

A boy sold 50 eggs at 12 cents a dozen, a peck of berries at 10 cents a quart, and 9 roses at 5 cents apiece. How much did he receive for all?

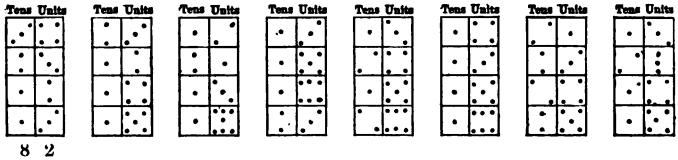
What will be the cost of 6 dozen plums at 7 cents a dozen, 4 dozen apples at 8 cents a dozen, and 3 dozen peaches at 7 cents a dozen?

Find the sum, adding the ones first:

41	12	31	32	42	14	21	13
33	44	24	41	11	13	32	20
11	12	11	21	21	12	11	14
10	30	20	13	12	30	12	40
12	21	13	30	20	40	22	31

Lesson 3.

ADDITION. CASE II.



8 2

These boxes have single cents in the right-hand rooms, and ten-cent pieces in the left-hand rooms. Find the number of single cents in a box first, and if you find as many as *ten* cents, change the ten single cents for a ten-cent piece, and put the ten-cent piece in a room on the left-hand side of the box. Then find the number of ten-cent pieces in the box.

Draw these boxes and express the numbers by figures instead of dots.

Four boys were counting their money. One boy had a quarter of a dollar, another had 35 cents, another had 14 cents, and the other had 36 cents. How much money had the boys altogether?

A broom cost a half of a dollar, a water pail cost half as much as the broom, and a coal shovel cost 18 cents. How much did all cost?

A market woman sold 3 dozen eggs at 12 cents a dozen, a pound of butter for 32 cents, and a peck of berries at 6 cents a quart. What did she receive for the eggs, the butter, and the berries altogether?

Lesson 4.

A farmer had 27 hens, 16 turkeys, and 12 ducks. How many fowls had he?

On one bush there are 15 rosebuds, on another 17, and on another 24. How many rosebuds on the three bushes?

In one piece of cloth there are 25 yards; in another, 15 yards; in another, 35 yards; and in another, 14 yards. How many yards are there in all of the pieces?

A garden is 18 feet on one side, 36 feet on another side, 14 feet on another side, and 33 feet on another side. How many feet of fence will it take to go around the garden, if the side that is 18 feet long has no fence? Draw the garden.

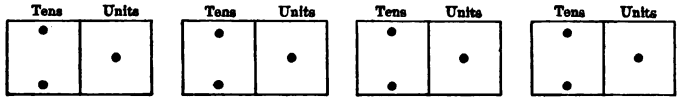
Find the sum, adding the ones first:

35	27	32	17	24	15	16	27
16	11	12	13	14	25	26	47
12	13	42	15	34	35	36	17
25	26	34	12	54	45	46	37
21	31	12	14	14	15	16	17

28	19	15	27	15	12	12	21
38	29	17	13	34	34	34	12
18	39	19	32	26	36	56	43
28	49	16	18	13	65	38	34
48	19	18	26	37	43	56	32
38	29	14	14	12	21	14	23

Lesson 5.

MULTIPLICATION. CASE I.



Here are four boxes with twenty-one cents in each box. To find how much money is in the boxes altogether, how many 21's must you take?

You may take four times the single cents first. (Four times one cent are four cents.) Now take four times the two tens. (Four times two tens are eight tens.)

Eight tens and four ones are how many?

How much money is in the boxes altogether?

Express the picture in figures.

Picture these problems, and find the answers.

How far is it around a square that is 22 inches on a side?

There are 52 weeks in a year. How many weeks in 2 years?

There are 32 quarts in a bushel. How many quarts in 2 bushels?

There are 24 sheets of paper in a quire. How many sheets of paper in 2 quires?

January, March, May, July, August, October, and December have each 31 days. How many days have these months altogether?

In two days there are how many hours?

Lesson 6.

MULTIPLICATION. CASE II.

I have a square box 16 inches on a side. How many 16's must you take to find how far it is around the box?

Take four times the six ones first. (Four times six inches are twenty-four inches.) Next take four times one ten. (Four times ten inches are forty inches.)

Forty and twenty-four are sixty-four.

Express this in figures.

If one yard of cloth cost 35 cents, what will be the cost of three yards?

In nine dozen eggs there are how many eggs?

There are 16 ounces in a pound. How many ounces are there in 6 pounds?

There are 36 inches in a yard. How many inches are there in 3 yards?

How many quarts are there in 5 bushels?

How many hours are there in a week?

How many ounces are there in 4 pounds?

Seven quarters of a dollar are how much money?

How many square feet in a blackboard that is 18 feet long and 4 feet wide?

Multiply:

15	17	18	14	25	39	57	46
4	5	4	7	4	2	2	2

Lesson 7.

SUBTRACTION. CASE I.

I had 47 roses and sold 23. If I had sold only 3 roses, how many should I have had?

How many more than 3 roses did I sell? Subtract the two tens from 44 and tell the answer.

How many roses had I left?

There were 58 trees in an orchard, but 32 were cut down. If 2 trees only had been cut down, how many would have remained standing?

Since 30 more were cut down, subtract the three tens and give the result.

How many trees remained standing?

In the following questions subtract the ones first:

A boy who had 56 cents spent a quarter of a dollar. How much money had he left?

At market a man bought a slice of ham for 23 cents, 3 bunches of radishes at 7 cents a bunch, and a dozen eggs for 18 cents. What did all cost?

What change ought he to receive, if he gave 75 cents in payment?

A man made a journey of 68 miles. When he had gone 45 miles, how much farther had he to go?

A train of cars is 79 minutes going from one station to another. If the train is in motion 67 minutes, how much time is taken in making stops?

A man who had 96 acres in his farm sold 21 acres. How many acres did his farm then contain?

Lesson 8.

A grocer bought 5 dozen lemons at the rate of 3 for 2 cents, and sold the lemons at the rate of 3 for 5 cents. What did he gain?

I had 57 chickens and sold 24. How many had I left?

In an orchard were 6 rows of trees with 13 trees in each row, and 37 trees around the outer edge of the orchard. How many trees were there in all?

If 58 of these trees died, how many were left?

A man bought two pecks of apples, at $0.25 a peck, and sold them for $0.45 a peck. How much did he gain?

A train of cars is 69 minutes in going from one station to another. If the train is in motion only 67 minutes, how much time is taken in making stops?

A man who had 96 acres in his farm sold 21 acres. How many acres did his farm then contain?

There were 47 trees in an orchard, but 14 were cut down. How many remained standing?

Find the difference. Subtract the ones first:

86	98	87	75	69	58
−22	−43	−34	−32	−25	−15
87	99	88	77	97	89
−53	−65	−53	−34	−62	−66

Lesson 9.

SUBTRACTION. CASE II.

A man who had 83 chickens sold 57. If he had sold only 7, how many would he have had?

How many more than seven did he sell? Subtract 50 from 76 and tell how many chickens the man had remaining.

In these problems subtract the ones first:

There are 52 weeks in a year. If 39 weeks have passed, how many more weeks are there?

There are 32 quarts in a bushel. If 16 quarts are taken from a bushel, how many quarts remain?

There were 52 children in a room, but a class of 28 was excused. How many were left in the room?

I bought a cow for $42, and paid $24 down. How much more had I to pay?

A table with two leaves is 52 inches wide when the leaves are up, and 28 inches wide when the leaves are down. How wide is each leaf?

If Lake Walden is 25 miles west from Boston, and Wachusett Mountain is 52 miles west from Boston, how far apart are the two places?

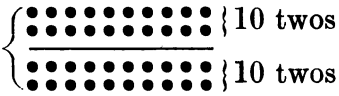
I had an hour and five minutes to wait over at a station. If business took 28 minutes of the time, how many minutes had I to spare?

Find the remainders:

46	57	61	92	41	32	81	42
18	29	38	57	23	14	12	36

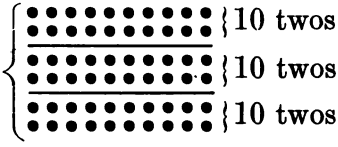
Lesson 10.

DIVISION. CASE I.

2's in 40  = 20 twos.

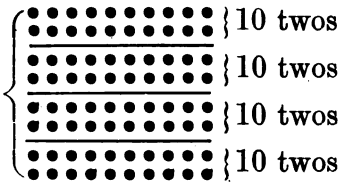
The number of dots in this picture tells how many quarts of syrup a man had. How many quarts had he?

He put the 40 quarts of syrup into 2-quart cans. How many cans did he need?

2's in 60  = 30 twos.

The number of dots in this picture tells how many shoes were in a case. How many shoes were in the case?

These shoes were in pairs. How many pairs of shoes were in the case?

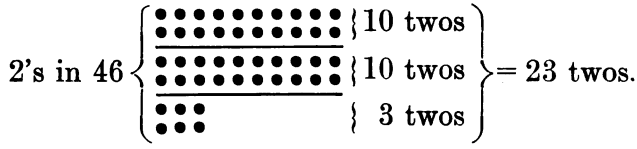
2's in 80  = 40 twos.

Make a problem for the number of 2's in 80.

Make pictures to show how many

2's in 100. 2's in 120.

Lesson 11.



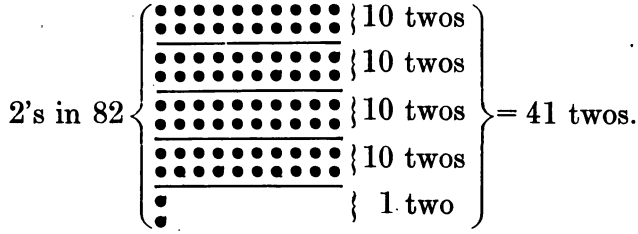
These dots show how many cubes there were in a box. How many were there?

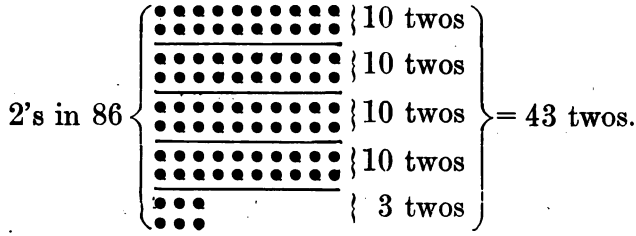
The cubes were packed in rows of 2 each. How many rows of cubes were in the box?

Make pictures like the one at the top of the page to show how many

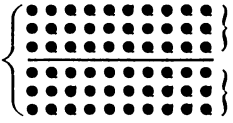
2's in 42.	2's in 64.	2's in 66.
2's in 48.	2's in 68.	2's in 84.
2's in 44.	2's in 62.	2's in 88.

Make problems for the pictures just below.





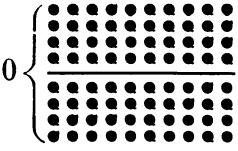
Lesson 12.

3's in 60  = 20 threes.

I have 60 pins. How many rows are there if three pins are in each row?

Make pictures to show how many

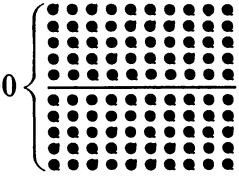
3's in 90. 3's in 66. 3's in 99.
3's in 120. 3's in 96. 3's in 93.

4's in 80  = 20 fours.

A man had 80 wheels. How many wagons will they supply if 4 wheels are used for each wagon?

Make pictures like this to show how many

4's in 120. 4's in 84. 4's in 88.

5's in 100  = 20 fives.

I have a dollar in 5-cent pieces. How many 5-cent pieces have I?

Find how many

5's in 150. 5's in 200. 5's in 55.

Lesson 13.

REVIEW.

How many quarts will 80 pint bottles hold?

A box-maker uses 2 circles for each cylindrical box that he makes. When he has used 48 circles, how many boxes has he made?

If it takes 2 panes of glass for each window, how many windows can be set with 64 panes?

A jeweller has 88 hands for the faces of clocks. How many clocks can he supply with hands?

How many bows will 82 yards of ribbon make if each bow takes 2 yards?

How many hats at $2 each can be bought for $42?

How many letters at 2 cents each will 40 cents' worth of stamps carry?

In 80 gills how many pints?

In 80 quarts how many gallons?

In 99 feet how many yards?

If the uniforms for a company of boys cost $69, at $3 each, how many boys are in the company?

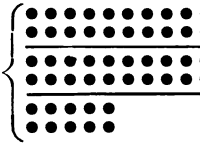
If a merchant sells $88 worth of boots in a day, at $4 a pair, how many pairs does he sell?

A drover paid $100 for lambs at $5 apiece. How many lambs did he buy?

If in a bed of plants there are 55 plants set out in rows with 5 plants in each row, how many rows of plants in the bed?

Lesson 14.

DIVISION. CASE II.

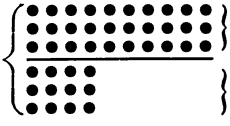
2's in 50  = 25 twos.

These dots show how many cents a lady spent for oranges. How many cents did she spend?

The oranges were 2 cents each. How many oranges did she buy?

Make pictures to show how many

2's in 30.	2's in 70.	2's in 90.
2's in 36.	2's in 38.	2's in 54.
2's in 56.	2's in 98.	2's in 34.
2's in 76.	2's in 58.	2's in 74.

3's in 42  = 14 threes.

I wish to know how many marbles at 3 cents each I can buy for 42 cents.

For 30 cents I can buy 10 marbles.

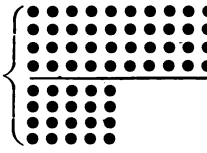
For 12 more cents I can buy 4 more marbles.

For 42 cents then I can buy 14 marbles.

Make pictures to show how many

3's in 45.	3's in 72.	3's in 48.
3's in 51.	3's in 81.	3's in 54.

Lesson 15.

4's in 60  = 15 fours.

I wish to find how many gallons of vinegar there are in a cask that holds 60 quarts. I first find how many gallons there are in 40 quarts. There are 10 gallons in 40 quarts.

I next find how many gallons there are in the 20 other quarts. There are 5 gallons in 20 quarts.

In 60 quarts, then, there are 15 gallons.

Find how many

4's in 52.	4's in 64.	4's in 96.
4's in 56.	4's in 72.	4's in 92.
4's in 68.	4's in 76.	4's in 100.

If Nellie is in school 70 days in a term, I wish to find how many school weeks she is in school. In 50 school days she is in school 10 weeks. In 20 school days she is in school 4 weeks. In 70 school days, then, she is in school 14 weeks.

Find how many

5's in 80.	6's in 78.	7's in 84.
5's in 90.	6's in 84.	7's in 91.
5's in 65.	6's in 96.	7's in 98.
5's in 75.	6's in 102.	8's in 96.
5's in 85.	6's in 108.	9's in 108.

Lesson 16.

FIFTY-FOUR. LIV. FIFTY-SIX. LVI.

Forty-eight and six are how many?

How many sixes in fifty-four?

Give a problem for 6)54(.

How many square inches in the surface of a 3-inch cube?

A man's yard is 54 feet across. How many rails 9 feet long will it take to reach across the yard? how many rails 6 feet long?

A chamber-set was valued at $54.00, but, being somewhat damaged, the price was reduced one-sixth. What was its reduced price?

There were 54 pounds of butter in a tub. How much remained when one-ninth of it had been used?

How many days in 7 weeks? in 8 weeks?

How long will 56 quarts of oats last a horse, if he eats a peck a day?

Give problems for 7)56(.

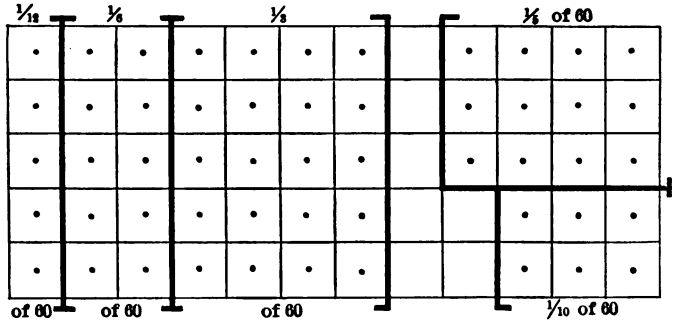
Give problems for 8)56(.

A man bought a chamber-set for $56.00, and a chair for one-eighth as much. What did he pay for both?

I bought a cooking-range for $56.00, and an oil-stove for one-seventh as much. What was the difference in price?

Count by sevens to 56. Count by eights to 56.

Lesson 17.



Call this a slate divided into inch squares.

How many square inches in the slate? in one-fifth of the slate? in one-tenth of the slate?

Which is more, a fifth or a tenth of the slate?

How many tenths in one-fifth?

How many tenths in one-fifth and one-tenth?

How many square inches in a third of the slate? in a sixth of the slate?

Which is more, one-sixth or one-third?

How many sixths in one-third?

How many sixths are one-third and one-sixth?

How many square inches in one-twelfth of 60?

How many twelfths in one-sixth?

How much is one-twelfth and one-sixth?

How many twelfths in one-third?

How many twelfths are one-third and one-sixth?

How many twelfths are one-third, one-sixth, and one-twelfth?

Lesson 18.

REVIEW.

If a man works at his trade 9 hours a day, how many hours does he work in a week?

If I can buy a ticket for 6 cents, how many tickets can I buy for 54 cents?

A roll of wall-paper 54 feet long will make how many strips, if our room is 9 feet high?

If a star-fish has 5 arms, how many arms have 10 star-fish?

Of 55 plants which the gardener set out this spring, one-fifth was killed by the frost. How many were killed?

If it takes 60 tiles for a fireplace, how many dozen tiles does it take?

My expenses for one month were 60 dollars. I spent one-half of the money for board, one-fifth for clothing, one-sixth for books and stationery, one-tenth for hired labor, and the rest in travelling. What did I spend for each item?

If while you are pumping 20 gallons of water out of a well one gallon runs in, how many gallons less are in the well after you have pumped the water than before?

A river at low water was 200 feet wide, but at high water it spread over the shore on one side 25 feet, and on the other side 38 feet. How wide was the river at high tide?

Lesson 19.

What was the cost of a man's breakfast if he paid 5 cents for a cup of coffee, 12 cents for fish, and 32 cents for bread and meat?

A lady doing her marketing bought a head of lettuce for 23 cents, some tomatoes for 15 cents, and some beef for 50 cents. How much did she spend?

What is the height of a house if the ground floor is 12 feet high, the next floor 11 feet high, and the garrets and roof 15 feet high?

Four times five-tenths are how many wholes?

Three times six-ninths are how many wholes?

Four times six-eighths are how many wholes?

Six times six-ninths are how many wholes?

Twelve times four-sixths are how many wholes?

One-half a dollar is worth how many quarters of a dollar? how many tenths of a dollar?

One-half of a quire of paper is how many sixths of a quire? how many twelfths of a quire?

One-half equals how many fourths? how many sixths? how many eighths? how many tenths?

One-third equals how many sixths? how many ninths? how many twelfths?

In 4 dollars how many fourths of a dollar?

In 2 yards how many sixths of a yard?

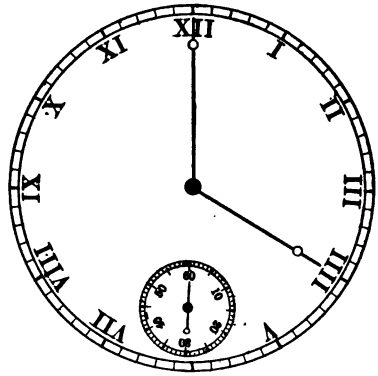
In 5 pounds how many thirds of a pound?

In 3 yards how many sevenths of a yard?

In 4 bushels how many eighths of a bushel?

Lesson 20.

MEASURE OF TIME.



Look at the smallest hand of the watch. When it has gone entirely round the little circle, a *minute* has passed.

See how many different words you can write in a minute; how many words that rhyme.

See how long a column of numbers you can write and add in a minute.

See if you can draw a square, an equilateral triangle, and a rectangle in a minute.

If the clock ticks sixty times a minute, it ticks *once* every *second*.

How many seconds must you count for a minute? for one-half of a minute? for one-fifth of a minute? for one-tenth of a minute?

Write: Sixty seconds make a minute.

Lesson 21.

Look at the longest hand on the watch. When it has gone entirely round the face of the watch, an *hour* has passed.

Let us see if we can find how many minutes it takes the long hand to go once round the watch.

It takes five minutes to go from twelve to one; five minutes to go from one to two; five minutes to go from two to three; and so on.

How many minutes is it, then, from twelve round to twelve again?

How many minutes make an hour?

How many minutes in half an hour? in one-quarter of an hour? in one-sixth of an hour?

How many minutes in two hours? in three hours? in four hours?

When the long hand is at one, how many minutes past the hour is it? When it is at two? at three? at four? at five? at six?

How many minutes of the hour is it when the long hand is at seven? at eight? at nine? at ten?

At what figure does the long hand point at quarter past the hour? at half past the hour? at quarter of the hour? at twenty minutes past?

Complete this table:

60 seconds =	7 days =
60 minutes =	4 weeks and 2 days =
24 hours =	12 months =

Lesson 22.

WRITTEN WORK.

How many cows were in four fields, if 40 were in one field, 32 in another, 21 in another, and 13 in another?

How many yards of fence will it take to enclose a field that is 74 yards on one side, 36 yards on another side, 85 yards on another side, and 47 yards on the remaining side?

A chamber-set cost $24.00, and a parlor-set cost 3 times as much. How much more did the parlor-set cost than the chamber-set?

How much did both cost together?

How many gallons of water will last 25 people a week, if each uses a gallon a day?

A set of table dishes cost $24.00, some knives and forks $\frac{2}{3}$ as much, and some spoons $\frac{1}{4}$ as much. How much did all cost?

On a certain street there lived 28 persons on one side, and 54 on the other side. If there were 15 visitors, how many persons were there on both sides of the street?

How many glass eyes will 58 dolls need?

How many handles have 2 dozen knives and forks?

A farm contains 45 acres of pasture land, 64 acres of cultivated land, and 28 acres of woodland. How many acres does the farm contain?

A town three miles square contains 25 persons to each square mile. How many persons live in the town?

One little book of stories contains 90 pages; another contains only 65 pages. How much larger is one book than the other?

A hogshead of molasses contained 63 gallons. From the hogshead 44 gallons were drawn off. What remained in the hogshead?

How long will a barrel of apples that contains 240 apples last, if 8 are eaten each day?

How many books 3 inches thick will go on a shelf 6 feet long?

How many steps are there in a flight of stairs that ascends 24 feet, if each step is 6 inches high?

How many trees are on both sides of a lane that is 200 feet long, if the trees are 4 feet apart?

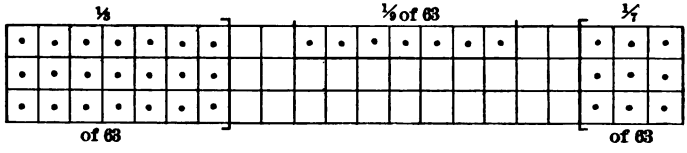
If the trees were 5 feet apart, how many less would there be on both sides of the lane?

If each month was exactly 4 weeks, how many months would there be in a year of 52 weeks?

If it costs $5.00 for a table 6 feet long, and 50 cents for every additional foot, how much must I pay for a table 10½ feet long?

If you and I are 20 rods apart, and you gain upon me 2 rods every minute, how long before you will overtake me? If I can walk 20 rods in a minute, how far shall I walk while you are catching up to me? How far will you walk?

Lesson 23.



This is a piece of narrow plank. It is twenty-one inches long and three inches wide. How many square inches does it contain?

How many square inches are in one-third of the plank? in one-ninth of the plank?

How many ninths in one-third?

How many square inches are in one-seventh of the plank?

Which is most, one-third, one-seventh, or one ninth of sixty-three? Which is least?

Find the sum:

$\frac{1}{3}$ of 63 + $\frac{1}{9}$ of 63. $\frac{1}{3}$ of 63 + $\frac{5}{7}$ of 63.

$\frac{2}{3}$ of 63 + $\frac{3}{9}$ of 63. $\frac{1}{7}$ of 63 + $\frac{1}{9}$ of 63.

$\frac{1}{3}$ of 63 + $\frac{1}{7}$ of 63. $\frac{2}{7}$ of 63 + $\frac{2}{9}$ of 63.

Find the difference:

$\frac{1}{3}$ of 63 − $\frac{1}{9}$ of 63. $\frac{4}{7}$ of 63 − $\frac{1}{3}$ of 63.

$\frac{1}{3}$ of 63 − $\frac{1}{7}$ of 63. $\frac{3}{9}$ of 63 − $\frac{1}{3}$ of 63.

$\frac{1}{7}$ of 63 − $\frac{1}{9}$ of 63. $\frac{5}{9}$ of 63 − $\frac{2}{7}$ of 63.

Find the product:

2 × $\frac{1}{3}$ of 63 = ? $\frac{1}{3}$ of $\frac{1}{7}$ of 63

3 × $\frac{2}{7}$ of 63 = ? $\frac{1}{7}$ of $\frac{1}{9}$ of 63.

4 × $\frac{2}{9}$ of 63 = ? $\frac{1}{3}$ of $\frac{1}{3}$ of 63.

Lesson 24.

64. SIXTY-FOUR. LXIV.

Sixty-four inch-tablets will form how large a square?

A room that is eight feet on each side has how many square feet in the floor?

If a strip of cardboard sixty-four inches long is cut into eight equal lengths, how long is each piece?

How many square inches in a right-angled triangle whose base and height are each eight inches? (Draw the triangle.)

Count by eights to sixty-four.

Count by sevens to sixty-three.

Count by nines to sixty-three.

Write the table of sixes.

Copy, and complete:

60 seconds = ?	$\frac{1}{2}$ minute = ?
60 minutes = ?	$\frac{1}{4}$ minute = ?
24 hours = ?	$\frac{1}{2}$ hour = ?
7 days = ?	$\frac{1}{4}$ hour = ?
4 weeks 2 days = ?	$\frac{1}{2}$ day = ?
12 months = ?	$\frac{1}{4}$ day = ?
100 years = ?	$\frac{1}{3}$ day = ?
1 minute = ?	$\frac{1}{4}$ year = ?
1 hour = ?	$\frac{1}{2}$ year = ?
1 day = ?	$\frac{1}{3}$ year = ?
1 week = ?	$\frac{1}{6}$ year = ?
1 year = ?	$\frac{1}{12}$ year = ?

Lesson 25.

ROMAN NUMERALS. I, V, X, L, C, D, M.

How is *one* expressed on the face of the clock?

How is *five* expressed?

How is *ten* expressed?

There are four other letters used to express numbers: L, C, D, M.

How many letters are used to express numbers?

Name them. Write them.

A people called the Romans first used these letters to express numbers; so we call them the *Roman Numerals.*

Express *one* with a Roman numeral.

Express *five* with a Roman numeral.

Express *ten* with a Roman numeral.

L stands for *fifty.*

C stands for *one hundred.*

Express *one hundred* with a Roman numeral.

Express *fifty* with a Roman numeral.

D stands for *five hundred.*

Express *five hundred* with a Roman numeral.

M stands for *one thousand.*

Express *one thousand* with a Roman numeral.

Copy, and learn:

I = one.	C = one hundred.
V = five.	D = five hundred.
X = ten.	M = one thousand.
L = fifty.	

Lesson 26.

IV, IX, XL, XC.

In each of the above expressions subtract the first part from the second part, and the remainder will be the number expressed.

Name the four new numbers you have expressed to-day with Roman numerals.

Express with figures:

I, V, X, L, C, D, M, IV, IX, XL, XC.

For how many do two I's stand? three I's?

Two X's stand for two tens, or twenty. Three X's stand for thirty.

Two C's stand for two hundred. For what do three C's stand? four C's?

Express with figures:

II, III, XX, XXX, CC, CCC, CCCC.

Express with Roman numerals:

1, 2, 3, 4, 5, 9, 10, 20, 30, 40, 50, 90, 100.

What stands for six? for seven? for eight?

Think of the value of the letters, and you can tell how these numbers are formed.

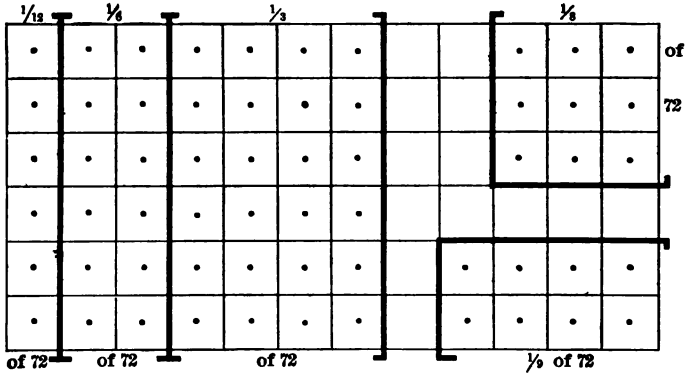
All numbers that you have not expressed in Roman numerals are formed the same as six.

Express the numbers between twelve and twenty; between twenty and thirty.

Write in Roman numerals all numbers that can be expressed by one letter; by two letters.

Express tens to one hundred in Roman numerals.

Lesson 27.



This is the carpet that covers a certain room. How many square feet does the floor contain?

How many yards of carpeting will it take if the carpet is a yard wide?

A bookcase that is a foot in width and six feet in length stands at one end of the room. What part of the whole floor does it occupy?

A table is four feet long and two feet wide. What part of the floor does the table occupy?

A movable bookcase is three feet square. What part of the floor does it occupy?

How many square feet will it take to carpet a closet one-sixth as large as my room?

If there is a mat in the centre of my room which covers one-third of the floor, how many square feet does the mat contain?

Find $\frac{1}{8}$ of 72; $\frac{1}{3}$ of 72; $\frac{1}{6}$ of 72; $\frac{1}{4}$ of 72; $\frac{1}{8}$ of 72.

Lesson 28.

81. EIGHTY-ONE. LXXXI.

How many squares, three inches on a side, can you cut from a nine-inch square?

What part of the nine-inch square will each three-inch square be?

How many separate triangles three inches on a side can be formed from eighty-one inch sticks?

If a pole is two yards and a quarter long, how many inches are in one-ninth of the pole?

A man had two grass-plots. One was a square nine feet on a side; the other was a rectangle three feet wide and twenty-seven feet long. Which was the larger?

Add by couples of numbers:

24	37	26	37	45	53
14	23	35	42	54	25
32	12	21	53	34	16
16	17	25	34	26	73
36	43	38	56	29	35
57	72	27	45	38	26
65	29	16	34	47	17
39	19	25	28	33	25
26	37	54	63	55	72
34	43	45	36	77	35
75	26	72	85	66	63
27	62	27	58	33	76

Lesson 29.

SQUARE NUMBERS.

Draw a square two inches on a side. Divide it into square inches. How many square inches does the square contain?

If any square is two units of length on a side, how many square units does it contain?

Since any square two units on a side contains four square units, we say *the square of two is four.*

We usually express it this short way: $2^2 = 4$.

How many times the square of two will you find in the surface of a 2-inch cube?

How many feet of land will 8 flagstones cover, if each is 2 feet square?

Draw a square *three* inches on a side, and find the number of square inches it contains.

If a square is three feet on a side, how many square feet will it contain?

If a square is three units of length on a side, how many square units will it contain?

What, then, is *the square of three?*

Express it in this way: $3^2 = 9$.

How many square inches of paper will cover a box that is three inches square, on all sides?

A gardener has a square flower-bed that contains 36 square feet. If he cuts it into plats 2 feet square, how many more can he make than if he cuts it into plats 3 feet square?

Lesson 30.

How many square inches are in a square four inches on a side?

Express *the square of four.* ($4^2 = 16$.)

How many 2-inch squares can you find in a 4-inch square?

Which is the larger, a piece of paper that contains 4 square inches, or a piece of paper that is 4 inches square? What is the difference between them?

If a square is five inches on a side, how many square inches does it contain?

Express the square of five. ($5^2 = 25$.)

If a square is six units of length on a side, how many square units does it contain?

Express the square of six. ($6^2 = 36$.)

How many 2-inch squares does a 6-inch square contain? How many 3-inch squares?

One piece of land contains 6 square feet; another is 6 feet square. What is the difference in size?

Express the square of seven.

If a square is 8 feet on a side, how many square feet does it contain?

How many 2-inch squares does an 8-inch square contain? How many 4-inch squares?

Express the square of eight.

Express the square of nine.

Name the numbers between one and a hundred that are square numbers.

Lesson 31.

Write the table of sevens.

Copy, and complete:

$2^2 = ?$	$4 = 2 \times ?$	$25 =$ the square of ?
$3^3 = ?$	$9 = 3 \times ?$	$49 =$ " " " ?
$4^2 = ?$	$16 = 4 \times ?$	$36 =$ " " " ?
$5^2 = ?$	$25 = 5 \times ?$	$16 =$ " " " ?
$6^2 = ?$	$36 = 6 \times ?$	$64 =$ " " " ?
$7^2 = ?$	$49 = 7 \times ?$	$81 =$ " " " ?
$8^2 = ?$	$64 = 8 \times ?$	$100 =$ " " " ?
$9^2 = ?$	$81 = 9 \times ?$	$4 =$ " " " ?
$10^2 = ?$	$100 = 10 \times ?$	$1 =$ " " " ?
$1^2 = ?$	$1 = 1 \times ?$	$9 =$ " " " ?

Complete in Roman numerals:

$1 =$	$10 =$	$13 =$	$21 =$	$50 =$
$5 =$	$20 =$	$14 =$	$23 =$	$56 =$
$10 =$	$30 =$	$15 =$	$24 =$	$57 =$
$50 =$	$100 =$	$6 =$	$29 =$	$58 =$
$100 =$	$200 =$	$7 =$	$32 =$	$60 =$
$500 =$	$300 =$	$8 =$	$35 =$	$70 =$
$1000 =$	$400 =$	$11 =$	$36 =$	$80 =$
$4 =$	$500 =$	$12 =$	$39 =$	$84 =$
$9 =$	$600 =$	$16 =$	$40 =$	$88 =$
$40 =$	$700 =$	$17 =$	$45 =$	$89 =$
$90 =$	$800 =$	$18 =$	$48 =$	$90 =$
$2 =$	$900 =$	$19 =$	$44 =$	$98 =$
$3 =$	$1000 =$	$20 =$	$49 =$	$99 =$

Lesson 32.

Complete, and learn by heart:

$2 \times 2 = ?$	$3 \times 2 = ?$	$4 \times 2 = ?$	$5 \times 2 = ?$
$2 \times 3 = ?$	$3 \times 3 = ?$	$4 \times 3 = ?$	$5 \times 3 = ?$
$2 \times 4 = ?$	$3 \times 4 = ?$	$4 \times 4 = ?$	$5 \times 4 = ?$
$2 \times 5 = ?$	$3 \times 5 = ?$	$4 \times 5 = ?$	$5 \times 5 = ?$
$2 \times 6 = ?$	$3 \times 6 = ?$	$4 \times 6 = ?$	$5 \times 6 = ?$
$2 \times 7 = ?$	$3 \times 7 = ?$	$4 \times 7 = ?$	$5 \times 7 = ?$
$2 \times 8 = ?$	$3 \times 8 = ?$	$4 \times 8 = ?$	$5 \times 8 = ?$
$2 \times 9 = ?$	$3 \times 9 = ?$	$4 \times 9 = ?$	$5 \times 9 = ?$
$6 \times 2 = ?$	$7 \times 2 = ?$	$8 \times 2 = ?$	$9 \times 2 = ?$
$6 \times 3 = ?$	$7 \times 3 = ?$	$8 \times 3 = ?$	$9 \times 3 = ?$
$6 \times 4 = ?$	$7 \times 4 = ?$	$8 \times 4 = ?$	$9 \times 4 = ?$
$6 \times 5 = ?$	$7 \times 5 = ?$	$8 \times 5 = ?$	$9 \times 5 = ?$
$6 \times 6 = ?$	$7 \times 6 = ?$	$8 \times 6 = ?$	$9 \times 6 = ?$
$6 \times 7 = ?$	$7 \times 7 = ?$	$8 \times 7 = ?$	$9 \times 7 = ?$
$6 \times 8 = ?$	$7 \times 8 = ?$	$8 \times 8 = ?$	$9 \times 8 = ?$
$6 \times 9 = ?$	$7 \times 9 = ?$	$8 \times 9 = ?$	$9 \times 9 = ?$

Copy, and multiply:

97	49	49	99	33	89
9	8	6	8	9	6
190	170	140	150	180	160
2	7	8	8	8	7
130	140	150	160	170	140
9	8	7	6	5	6

Lesson 33.

WRITTEN WORK.

If a merchant sells 21 yards of silk for a dress, how many yards are in a piece of goods from which he can sell 4 dresses?

A man has 4 baskets, each containing 24 apples. If he sells them at $0.05 a dozen, what will he receive?

A man had 96 books. He sold 84 books. What part of the whole number had he left.

A man shipped eight dozen boxes of oranges from Florida. When the oranges arrived, $\frac{1}{12}$ was decayed. How many boxes were good?

A train travels 96 miles in 3 hours. What is the rate of speed per hour?

A man bought a bushel of peaches at $0.03 a quart. What did he pay for the bushel of peaches?

If a large cask holds 48 gallons, what will 2 casks hold?

Charles gets $6.00 a month for helping his father. Emma gets $\frac{1}{2}$ as much for helping her mother. How much will both have earned in a year?

How broad is a house which is 3 rooms in breadth, each room being 15 feet broad, the two outer walls being each 2 feet thick, and the partitions between the rooms each $\frac{1}{2}$ a foot thick?

How many hours are there in a week?

How far is it around a square which is 19 feet on a side?

If one scale pan had 25 pounds in it, and the other had 13 pounds in it, how many pounds must be taken from one and put into the other to make the scales balance?

If a cord of wood is worth $6, and 10 cords of wood are given for 12 thousand shingles, how much are the shingles a thousand?

A man bought an equal number of pigs and sheep for $140. Each pig cost $3, and each sheep $4. How many of each did he buy?

A woman bought 24 yards of gingham at $0.12 a yard, and 23 yards of cotton cloth at $0.10 a yard. How much change did she receive out of a ten-dollar bill?

A man can do a piece of work in 8 days by working 12 hours a day. How many days will be required if he works only 8 hours a day?

A man can do a piece of work in 15 days by working 8 hours a day. How many hours a day must he work to finish it in 12 days?

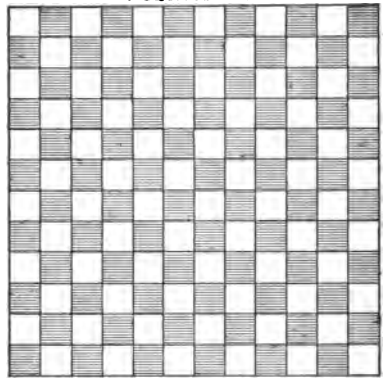
Two men are 60 miles apart, and are travelling toward each other, one at the rate of 5 miles an hour, and the other at 3 miles an hour. In how many hours will they meet?

If 2 yards of silk cost $4, what will 17 yards cost?

Lesson 34.

SQUARE MEASURE.

1 SQUARE FOOT.



This is the top of a small table that is a foot square. How many inches is the table on a side?

The table is marked off into square inches. How many square inches are in the top of the table?

How many square inches are in a square foot?

If you put four plants in a square foot of land, how many inches could you allow each plant?

How many inches are in one-half of a square foot?

Can you form a square from half of a square foot?

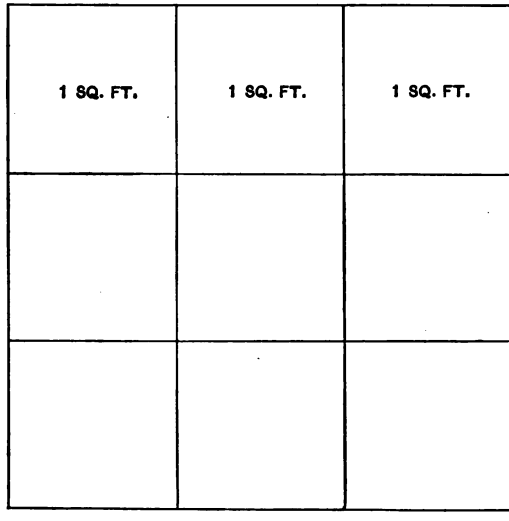
If you cut a square foot of paper into inch strips, how many strips can you make?

How many square inches will each strip contain?

Write: 144 sq. in. = 1 sq. ft.

Lesson 35.

1 SQUARE YARD.



This is a table cover that is a yard square. How many feet is the table cover on one side?

How many square feet are in the table cover?

Which is larger, a flower-bed that contains three square feet, or one that is three feet square?

How many times as large as one is the other?

Two square yards are how many square feet?

A garden that is two yards square contains how many square feet?

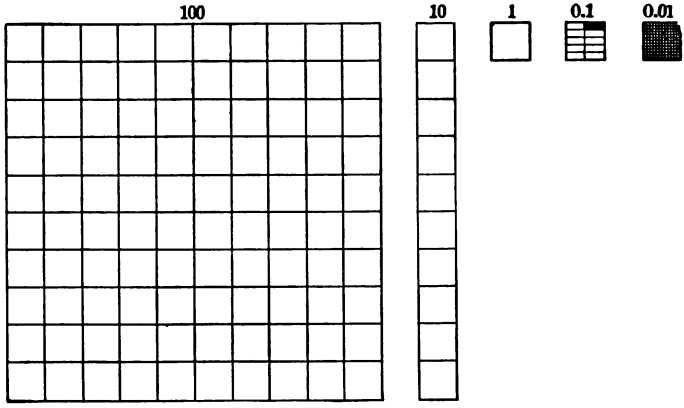
A grass plat that is three yards square contains how many square feet?

Write: 9 sq. ft. = 1 sq. yd.

CHAPTER VII.

DECIMAL FRACTIONS.

Lesson 1.



I have a hundred-dollar bill, a ten-dollar bill, a one-dollar bill, a ten-cent piece, and a single cent.

Express the sum in figures.

How many times the cent is the ten-cent piece?

How many times the ten-cent piece is the dollar?

How many times the dollar is the ten-dollar bill?

How many times the ten-dollar bill is the hundred-dollar bill?

How many of each will it take to make one of the next higher?

Lesson 2.

In this number, 222.22, what does the left-hand 2 express? What does the next 2 express? Tell what each figure expresses.

Which 2 stands for the greatest number of things? Which 2 stands for the least number of things? Each 2 is how many times the 2 at its right?

Each 2 is what part of the 2 at its left?

In this number, 425.35, tell what each figure names.

Tell what each figure names in these numbers:

432.15	43.57	7.35	601.4
210.39	40.23	6.03	723.5
300.03	20.05	4.00	320.2
227.33	50.02	9.01	735.3
423.05	75.05	7.77	222.2
607.03	80.07	6.05	444.4

Express in figures:

Two hundred, three tens, two units, three tenths, four hundredths.

Five tens, five tenths.

Seven units, five hundredths.

Three hundred, three hundredths.

Six tens, three units, two hundredths.

Two hundred and three units, two hundredths.

Fifty units, five hundredths.

Between what two places does the dot stand?

Lesson 3.

THE TENTH.

0.1	0.1	0.1	0.1	0.1
0.1	0.1	0.1	0.1	0.1

Express in figures and find the answer:

One-tenth, three-tenths, and four-tenths = ?

Five-tenths, two-tenths, and one-tenth = ?

Seven-tenths, one-tenth, and zero-tenths = ?

Eight-tenths minus three-tenths = ?

Nine-tenths minus seven-tenths = ?

Seven-tenths minus three-tenths = ?

Two times four-tenths = ?

Four times two-tenths = ?

Three times two-tenths = ?

Eight-tenths divided by two-tenths = ?

Six-tenths divided by three-tenths = ?

Eight-tenths divided by four-tenths = ?

One-half of four-tenths = ? of eight-tenths = ? of six-tenths = ? of two-tenths = ?

One-third of six-tenths = ? of three-tenths = ?

One-fourth of eight-tenths = ? of four-tenths = ?

Ask 20 questions which you can answer by looking at the rectangle divided into tenths.

Lesson 4.

25 tenths = how many units and tenths?

32 tenths = how many units and tenths?

46 tenths = ?	37 tenths = ?	19 tenths = ?
64 tenths = ?	46 tenths = ?	27 tenths = ?
21 tenths = ?	33 tenths = ?	83 tenths = ?
15 tenths = ?	12 tenths = ?	95 tenths = ?

Copy, and add:

7.6	37.8	75.7	87.2	123.4
9.4	46.9	86.6	56.8	234.1
3.6	38.5	98.7	37.9	341.2
5.7	97.9	37.9	48.7	412.3
9.8	65.9	89.6	78.5	567.8
7.7	76.3	68.7	57.8	678.5
5.9	87.6	86.7	85.7	785.6
3.5	58.5	77.9	33.3	856.7

Copy, and multiply:

7.6	3.9	7.3	37.5	8.4	5.7
6	9	2	9	6	5
9.5	5.7	8.5	25.7	6.3	7.2
3	8	7	8	8	7
8.4	6.5	5.4	64.5	7.5	8.7
7	8	6	9	9	7
7.5	7.8	3.7	37.2	8.7	5.9
9	7	5	5	5	8

Lesson 5.

Copy, and subtract:

5.7 − 3.9	89.6 − 25.7	96.4 − 25.8	90.2 − 34.8	900.1 − 65.7
8.2 − 2.7	86.5 − 37.6	76.8 − 32.9	87.6 − 23.7	800.4 − 79.8
9.3 − 1.4	78.2 − 29.8	42.7 − 18.5	30.5 − 10.7	700.2 − 200.8
7.5 − 2.8	64.1 − 29.7	37.2 − 19.6	50.3 − 19.8	500.1 − 100.9
6.2 − 3.7	85.3 − 37.8	28.9 − 19.8	20.2 − 19.7	600.0 − 99.9

Copy, and divide:

0.4) 2.8	0.4) 3.6	0.7) 6.3	0.2) 9.4	1.2) 3.6
0.9) 7.2	0.6) 5.4	0.8) 5.6	0.3) 9.9	1.2) 4.8
0.7) 8.4	0.8) 7.2	0.2) 4.2	8.4) 9.6	1.2) 9.6
0.9) 6.3	0.9) 8.1	0.3) 9.6	0.5) 7.5	1.2) 7.2
0.6) 4.2	0.7) 4.2	0.4) 7.2	0.6) 9.6	1.2) 8.4
0.5) 3.5	0.8) 3.2	0.9) 9.6	0.7) 9.1	1.2) 6.0
0.9) 4.5	0.9) 3.6	0.8) 4.8	0.3) 5.4	1.2) 2.4
0.6) 7.2	0.4) 4.8	0.7) 5.6	0.4) 7.2	1.2) 10.8

Lesson 6.

THE HUNDREDTH.

0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Draw a rectangle. Divide it into one hundred equal parts. What part of the whole is each part?

Ask 20 questions which you can answer by studying the rectangle divided into hundredths.

Express and find the answer:

2 hundredths, 3 hundredths, and 1 hundredth = ?

1 hundredth, 3 hundredths, and 4 hundredths = ?

5 hundredths, 1 hundredth, and 3 hundredths = ?

9 hundredths − 4 hundredths = ?

7 hundredths − 2 hundredths = ?

8 hundredths − 3 hundredths = ?

2 times 4 hundredths = ?

3 times 2 hundredths = ?

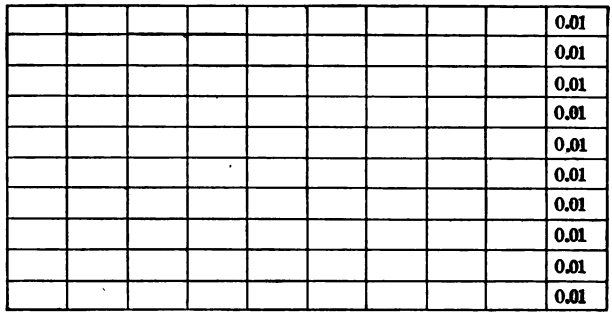
3 times 3 hundredths = ?

8 hundredths divided by 2 hundredths = ?

9 hundredths divided by 3 hundredths = ?

6 hundredths divided by 3 hundredths = ?

Lesson 7.



Into how many parts do the vertical lines divide this rectangle?

How many hundredths are in each tenth?

Copy, and complete:

2 tenths = hundredths. 30 hundredths = tenths.
4 tenths = hundredths. 70 hundredths = tenths.
8 tenths = hundredths. 50 hundredths = tenths.
5 tenths = hundredths. 90 hundredths = tenths.
7 tenths = hundredths. 65 hundredths = tenths.
9 tenths = hundredths. 39 hundredths = tenths.
3 tenths = hundredths. 85 hundredths = tenths.
6 tenths = hundredths. 47 hundredths = tenths.

Copy, and add:

3 tenths 4 hundredths, 2 tenths 9 hundredths.
5 tenths 6 hundredths, 7 tenths 5 hundredths.
4 tenths 3 hundredths, 5 tenths 2 hundredths.
7 tenths 8 hundredths, 2 tenths 4 hundredths.
9 tenths 6 hundredths, 3 tenths 4 hundredths.

Lesson 8.

Copy, and add:

6.04	0.36	0.79	6.09	9.56
9.32	0.54	0.09	0.07	3.07
8.61	0.06	0.3	3.97	0.8
9.21	0.98	0.79	6.4	5.0
3.76	0.42	0.87	5.06	7.26
2.09	0.25	0.99	3.09	8.95
1.7	0.42	0.68	7.08	2.76
3.06	0.02	0.76	0.85	8.52
6.09	0.75	0.98	6.0	4.0
4.08	0.87	0.07	0.5	0.8
3.07	0.78	0.08	0.07	3.06
4.06	0.57	0.06	3.6	0.5

Copy, and multiply:

0.39 × 7	0.09 × 7	2.07 × 5	0.27 × 20	0.25 × 22
0.64 × 5	0.03 × 9	1.06 × 7	0.49 × 50	0.34 × 32
0.46 × 7	0.09 × 9	3.09 × 9	0.87 × 60	0.27 × 19
0.37 × 8	0.07 × 9	4.05 × 8	0.95 × 70	0.39 × 17
0.58 × 9	0.09 × 5	6.08 × 7	0.36 × 90	0.28 × 16

Lesson 9.

Copy, and subtract:

9.98 − 2.09	0.97 − 0.29	0.06 − 0.27	6.7 − 0.27	4. − 0.98
7.03 − 1.07	0.69 − 0.27	0.8 − 0.29	5.9 − 2.39	9. − 0.37
6.05 − 2.08	0.97 − 0.38	0.5 − 0.08	5.6 − 0.99	3. − 0.45
6.5 − 0.37	0.85 − 0.09	0.4 − 0.09	8.5 − 2.73	7. − 0.83

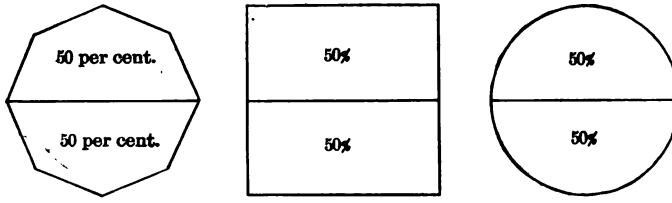
Copy, and divide:

0.07) .84	0.03) .96	0.08) 1.53	0.13) 1.43
0.09) .72	0.02) .74	0.08) 1.44	0.17) 3.57
0.07) .63	0.03) .87	0.07) 1.26	0.19) 5.89
0.06) .54	0.04) .56	0.09) 2.88	0.15) 4.65
0.08) .56	0.02) .94	0.06) 4.56	0.23) 4.83
0.06) .72	0.05) .95	0.05) 3.95	0.25) 7.50
0.12) .64	0.04) .92	0.07) 4.48	0.34) 7.14
0.12) .96	0.06) .84	0.08) 5.02	0.36) 7.56
0.07) .56	0.07) .91	0.04) 4.40	0.42) 8.82

CHAPTER VIII.

PERCENTAGE.

Lesson 1.



What part of an octagon is fifty per cent of it?

What part of a square is fifty per cent of it?

What part of a circle is fifty per cent of it?

What is fifty per cent of an apple?

A boy who had ten cents spent fifty per cent of his money. How much money did he spend?

In a class of twenty children fifty per cent were absent. How many were absent?

If you have written fifty per cent of your spelling words, what part of the lesson have you written?

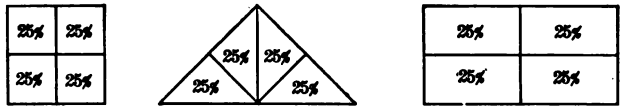
Ten cents is what per cent of twenty cents?

Five dollars is what per cent of ten dollars?

This sign, %, stands for *per cent.*

Find 50% of 16, 24, 2, 1, 30, 50, 100, 80, 28.

Lesson 2.



Twenty-five per cent of a triangle is what part of the triangle?

What part of a square is 25 per cent of it?

One-fourth of a rectangle is what per cent of the rectangle?

A quarter of an orange is what per cent of the orange?

What is 25 per cent of sixteen cents?

Willie had a half-dollar, and James had thirty cents. They put their money together and spent 25 per cent of the sum for fire-crackers and 50 per cent for torpedoes. How much money did they spend altogether?

A man bought a cart for twenty dollars and sold it at a loss of 25 per cent. What did he get for the cart?

A man bought a table for eight dollars and sold it at a gain of 25 per cent. What did he get for the table?

Find 50% of 60, 24, 36, 18, 12, 50, 100, 200.

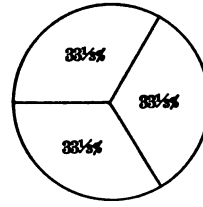
Find 25% of 12, 36, 24, 48, 16, 100, 20, 40.

What per cent of 8 is 2? is 4?

What per cent of 20 is 10? is 5?

What per cent of 100 is 50? is 25?

Lesson 3.



$33\frac{1}{3}\%$ of a circle is what part of the circle?

What part of a ring is $33\frac{1}{3}\%$ of the ring?

One-third of a hexagon is what per cent of the hexagon?

A boy who earned \$6.00 a week spent $33\frac{1}{3}\%$ of it for dinners through the week. What did he pay for his dinners?

A coat that cost \$18.00 was sold at a loss of $33\frac{1}{3}\%$. For how much was the coat sold?

A book that was marked \$0.75 became damaged and was sold at a reduction of $33\frac{1}{3}\%$. For what price was the book sold?

A grocer bought sugar for \$0.06 a pound and sold it at a gain of $33\frac{1}{3}\%$. At what price did he sell the sugar?

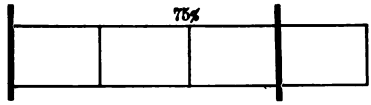
Find $33\frac{1}{3}\%$ of 9, 90, 75, 36, 15, 27, 3, 30, 60, 24.

$\frac{1}{2}$ = what per cent? $\frac{1}{4}$ = what per cent? $\frac{1}{3}$ = what per cent?

What per cent of 12 is 4? is 6? is 3?

What per cent of 48 is 24? is 12? is 16?

Lesson 4.



What part of a rectangle is 75% of it?

What per cent of a dollar is $\frac{3}{4}$ of the dollar?

A gardener set out three dozen trees, but only 75% of the number lived. How many lived?

A man who bought cranberries at $4.00 a barrel sold them at a gain of 75%. What price did he receive for the cranberries?

Find 75% of 4, 40, 20, 36, 24, 16, 28, 32, 100.

25% = $\frac{1}{4}$? 50% = $\frac{1}{2}$? 75% = $\frac{3}{4}$? 33$\frac{1}{3}$% = $\frac{1}{3}$?

66$\frac{2}{3}$% 66$\frac{2}{3}$%

⊕⊕ | ⊕⊕ | ⊕⊕ ∗∗∗ | ∗∗∗ | ∗∗∗

What is 66$\frac{2}{3}$% of 6 balls? of 9 stars?

What is 66$\frac{2}{3}$% of a day? of an hour?

What is 66$\frac{2}{3}$% of a dozen eggs?

What part of a dollar is 33$\frac{1}{3}$% of it?

A bar of fresh soap weighed 3 pounds. After it had dried it weighed only 66$\frac{2}{3}$% as much. How much did it weigh after it had dried?

Find 66$\frac{2}{3}$% of 6, 60, 30, 9, 90, 27, 18, 36, 150.

Find 33$\frac{1}{3}$% of the above numbers.

$\frac{1}{3}$ = what per cent? $\frac{1}{4}$ = what per cent?

$\frac{2}{3}$ = what per cent? $\frac{3}{4}$ = what per cent?

Lesson 5.

REVIEW.

If you have 20 cents, and spend 15 cents, what part of your money do you spend? What per cent of your money?

A merchant has a piece of flannel containing 25 yards. If he sells 12½ yards, what fractional part of the whole does he sell? What per cent of the whole does he sell?

If I teach 6 hours in the day, what part of the day do I teach? What per cent of the day am I employed in teaching?

If I have four 5-cent pieces, and spend one of them, what per cent of my money do I spend? If I spend 3 pieces, what per cent do I spend?

If I use 18 sheets from a quire of paper, what part of the whole do I use? What per cent of the whole?

If a man sells a load of wood for $16 which cost him $12, what per cent of the cost is the gain?

If you buy a knife for 50 cents and sell it for 75 cents, what per cent of the cost is the gain?

If you have 18 marbles and lose 6 marbles, what per cent do you lose?

A jeweller bought a pin for $2, which was 50% of what he sold it for. For what did he sell it?

Ida spent 6 cents this morning, which was 50% of all she had. How much money had she?

Lesson 6.

REVIEW.

A man gained 20 cents on a book, which was 25% of its cost. Find the cost of the book.

If a man gains $1 on a pair of shoes, and this is 33⅓% of their cost, find their cost.

If you go to school 75% of the year, how many months do you have for vacation?

For what must cloth which cost $1 a yard be sold to gain 25 per cent?

For what must apples which cost 12 cents a dozen be sold to gain 50 per cent?

For what must confectionery which costs 15 cents a pound be sold to gain 66⅔ per cent?

A quantity of sugar which weighed 75 pounds was found to have decreased 33⅓ per cent in weight by drying. How much did it then weigh?

Two cents is 50% of how much money?

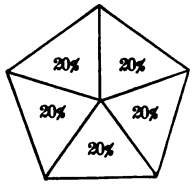
The cook used four eggs, which was 33⅓% of the number that she had. How many eggs had she?

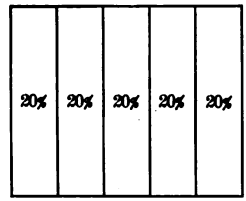
There were 10 crooked pins on the cushion, which was 25% of all the pins on the cushion. How many pins were on the cushion?

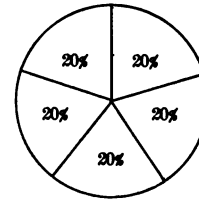
When a housekeeper had used 18 pounds from a bag of flour, 66⅔% of the whole bag of flour had been used. How many pounds did the bag hold?

The width of a garden plat is 6 feet, and that is 75% of its length. What is its length?

Lesson 7.







What part of a pentagon is 20% of it?

What part of a rectangle is 20% of it?

$\frac{1}{5}$ of a circle is what per cent of the circle?

Find 20% of twenty pencils.

A man who had $50 spent 20% of it for a coat, and put 50% in the bank. How much did the coat cost, and how much did he put in the bank?

A man had 40 acres of land. If 20% of the land was planted with corn, and 75% was grass land, how many acres were planted with corn, and how many acres of grass land were there?

In an orchard of 60 trees, 20% were pear-trees, 25% were peach-trees, 50% were apple-trees, and the rest were cherry-trees. How many trees of each kind were there in the orchard?

5 is what per cent of 20? of 10? of 15? of 25?

6 is what per cent of 18? of 24? of 30? of 8?

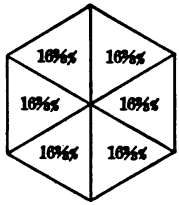
Find 20% of 5, 25, 10, 35, 40, 30, 50, 45, 15, 20.

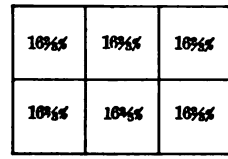
4 is 20% of what number?

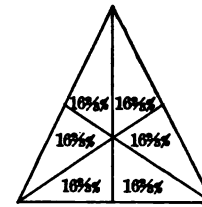
5 is 20% of what number?

9 is 20% of what number?

Lesson 8.







What part of a hexagon is 16⅔% of it?

What part of a rectangle is 16⅔% of it?

16⅔% of a triangle is what part of the triangle?

A book that cost 60 cents was sold at a gain of 16⅔%. For what sum was the book sold?

A ship that carried a cargo of bananas was overdue ten days. When it arrived, ⅛ of the bananas were decayed. What per cent of the cargo was lost?

John earned $36 a month. He spent 50% of what he earned for board, 25% for clothing, and 16⅔% for pleasure. What had he left?

A man who buys apples at 2 cents each sells them at 3 cents each. What is his per cent of gain?

If cranberries cost 12 cents a quart, at what price per quart must they be sold to gain 16⅔%?

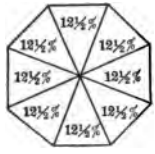
½ = what per cent? ¾ = what per cent?

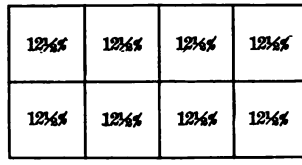
¼ = what per cent? ⅕ = what per cent?

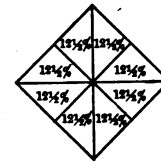
⅛ = what per cent? ⅓ = what per cent?

Find 16⅔% of 12, 6, 24, 3, 36, 54, 48, 42, 30.

Lesson 9.







What part of an octagon is $12\frac{1}{2}\%$ of it?

What part of a rectangle is $12\frac{1}{2}\%$ of it?

What part of a square is $12\frac{1}{2}\%$ of it?

Copy the diagrams above.

What is $12\frac{1}{2}\%$ of

□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □?

What is $12\frac{1}{2}\%$ of ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕?

There were 72 bananas in a bunch. $12\frac{1}{2}\%$ were sold at one time, $33\frac{1}{3}\%$ at another time, and $16\frac{2}{3}\%$ at another time. How many remained?

In a room of 48 pupils, $12\frac{1}{2}\%$ were absent one very stormy day, 25% were excused to go home earlier than usual, and 50% were sent out of the room for a recitation. What per cent of the whole number remained in the room?

Find $12\frac{1}{2}\%$ of 64, 16, 8, 4, 32, 40, 24, 48, 80.

2 is $12\frac{1}{2}\%$ of what number?

6 is $12\frac{1}{2}\%$ of what number?

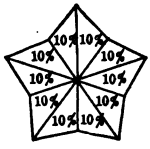
3 is $12\frac{1}{2}\%$ of what number?

8 is $12\frac{1}{2}\%$ of what number?

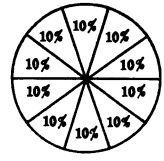
9 is $12\frac{1}{2}\%$ of what number?

7 is $12\frac{1}{2}\%$ of what number?

Lesson 10.



10%	10%	10%	10%	10%
10%	10%	10%	10%	10%



What part of a rectangle is 10% of it?

What % of a circle is $\frac{1}{10}$ of the circle?

What is 10% of \$1? What is 10% of \$4?

What is 10% of a minute? of an hour?

What is the number of children in your room, if 5 is 10% of the whole number?

A man lent \$100 for two years and gained 10% on his money. How much money did he gain?

A man bought bananas at 20 cents a dozen and sold them so as to gain 25%. What did he receive for a dozen?

Sugar was bought for 5 cents a pound and sold at a gain of 20%. For what was the sugar sold?

Dress goods that cost \$1.00 a yard was sold at a gain of 10%. What was the cloth per yard?

If a grocer gained 2 cents on every 20 cents' worth of flour that he sold, what was his per cent of gain?

If a book that cost 50 cents was sold for 55 cents, what was the per cent of gain?

5 is what % of 10? of 50? of 25? of 15? of 20?

Find 10% of 20, 100, 50, 5, 30, 70, 90, 40.

Lesson 11.

REVIEW.

I bought a bookcase for $15, and sold it for $18. What per cent did I gain?

There were 20 children in the class at the beginning of the term, but there are only 15 now. What per cent of the class has dropped out?

A man who buys apples at 2 cents sells them at 3 cents. What per cent does he gain?

If 2 bananas cost 3 cents, and sell for 5 cents, what is the per cent of gain?

If envelopes cost 6 cents a bunch, and sell for 9 cents a bunch, what is the per cent of gain?

If cloth which costs $1 a yard sells for $1.25, what is the per cent of gain?

If goods which cost $100 sell for $75, what is the per cent of loss?

I have a box containing 12 bunches of envelopes. If I use $16\frac{2}{3}$ per cent of the envelopes, how many bunches do I use?

A pupil wrote 40 words, and misspelled 10% of them. How many words did he misspell?

In a school there were 60 pupils. One stormy day 6 were absent. What per cent were absent? If 4 more were dismissed, what per cent were absent?

If, in a school of 64 pupils, $12\frac{1}{2}\%$ are absent, how many children are absent?

Lesson 12.

REVIEW.

If \$8 is 12½% of what a man earns in a month, what does he earn in a month?

If a man buys a chair for \$8, and sells it for \$9, what is his per cent of gain?

For what must cloth that cost 16 cents a yard be sold to gain 12½%?

If a horse cost \$80, at what price must it be sold to gain 10%?

If 5 cents is 10% of the money in your pocket, how much money is in your pocket?

A jeweller sold a watch for \$6 more than he gave for it, which was 16⅔% of its cost. What was the cost of the watch?

If butter cost 24 cents a pound, at what price must it be sold to gain 16⅔%?

At the top of a blackboard there is a strip 8 inches wide. If this strip is 20% of the width of the blackboard, how wide is the blackboard?

If a line is 5 inches long, how long will it be when 20% has been added to its length?

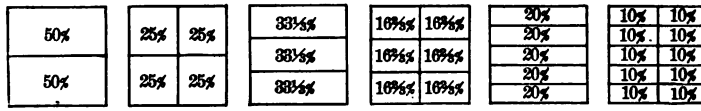
Express each of these per cents as a fraction:

25%	20%	50%	75%	66⅔%
33⅓%	16⅔%	12½%	10%	87½%

Express each of these fractions as a per cent:

$\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{10}$, $\frac{1}{8}$, $\frac{1}{5}$, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{3}{4}$, $\frac{1}{6}$.

Lesson 13.



How many per cent make a whole square?

How many per cent make a whole dollar?

What per cent of 10 cents is 10 cents?

What is 100% of 10 books?

What is 100% of 2 watermelons?

A chair that cost $3 was sold at a gain of 100%. At what price was the chair sold?

An inkstand that cost 50 cents was sold at a gain of 100%. At what price was the inkstand sold?

If berries that cost 5 cents a quart are sold for 10 cents a quart, what is the per cent of gain?

If a whole square is 100% of the square, what part of the square is 1% of it?

What per cent of the square is $\frac{1}{100}$ of the square?

What per cent of the square is $\frac{2}{100}$ of the square?

What per cent is $\frac{3}{100}$? $\frac{5}{100}$? $\frac{10}{100}$? $\frac{7}{100}$? $\frac{20}{100}$? $\frac{9}{100}$?

What part of a number is 7% of it? 20% of it? 10% of it? 3% of it? 9% of it? 25% of it?

What is 1% of a dollar? 2% of a dollar? 6% of a dollar? 10% of a dollar? 50% of a dollar?

What is 5% of $20? of $40? of $80? of $100?

What is 6% of $1? of $6? of $3? of $4?

Lesson 14.

Copy, and complete:

$\frac{1}{2}$ =	%.	8 =	%.	$\frac{3}{4}$ =	%.
$\frac{1}{4}$ =	%.	4 =	%.	$\frac{2}{5}$ =	%.
$\frac{1}{5}$ =	%.	5 =	%.	$\frac{3}{10}$ =	%.
$\frac{1}{10}$ =	%.	$1\frac{1}{2}$ =	%.	$\frac{7}{20}$ =	%.
$\frac{1}{20}$ =	%.	$1\frac{1}{4}$ =	%.	$\frac{3}{25}$ =	%.
$\frac{1}{25}$ =	%.	$1\frac{1}{5}$ =	%.	$\frac{9}{50}$ =	%.
$\frac{1}{50}$ =	%.	$1\frac{1}{10}$ =	%.	$1\frac{3}{4}$ =	%.
1 =	%.	$1\frac{1}{20}$ =	%.	$1\frac{2}{5}$ =	%.
2 =	%.	$1\frac{1}{25}$ =	%.	$1\frac{3}{10}$ =	%.
3 =	%.	$1\frac{1}{50}$ =	%.	1 =	%.

Express as decimal fractions:

1 per cent =	2 per cent =	3 per cent =
5 per cent =	4 per cent =	9 per cent =
7 per cent =	6 per cent =	8 per cent =
12 per cent =	13 per cent =	100 per cent =
15 per cent =	17 per cent =	150 per cent =
25 per cent =	20 per cent =	200 per cent =
30 per cent =	50 per cent =	500 per cent =

Find:

25 per cent of 80.	6 per cent of 163.
10 per cent of 90.	8 per cent of 300.
75 per cent of 24.	9 per cent of 700.
50 per cent of 50.	7 per cent of 420.
50 per cent of 80.	60 per cent of 45.
20 per cent of 50.	40 per cent of 85.